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ORNAMENTAL NURSERY STOCK



THE JEWELL NURSERY CO.
LAKE CITY, MINN.



The Autumn Blooming Pyrethrum (*Pyrethrum Uliginosum*.)



An Arbor of Climbing Roses.

Ornamental Nursery Stock

HERBACEOUS PERENNIAL PLANTS

DECIDUOUS SHRUBS

DECIDUOUS TREES

EVERGREENS (Coniferæ)



The Jewell Nursery Co.
Lake City, Minn.

ESTABLISHED 1868

CAPITAL \$100,000.00

BY DR. P. A. JEWELL

1200 ACRES

JEWELL CATALOG "B"

Jewell Catalog of Ornamental Nursery Stock

WE take pleasure in presenting our General Catalog of Ornamental Stock; with descriptions revised to date according to the best authorities, and augmented by numerous varieties not hitherto catalogued.

A Comprehensive Catalog for the Northwestern and Central States.

Our nursery was established primarily as a base of supply for the Northern planter and our stock is propagated with this fact in view. Yet we are pleased to find a constantly increasing trade thru the Central States where many planters of Jewell stock testify to the advantages of the northern grown tree. In those more temperate parts of the Mississippi watershed, there is a demand for many semi-hardy varieties. and in this edition therefore we list some of the most generally commended varieties of this class. As a whole, however, this Catalog is chiefly addressed to the Northern planter, the greater portion of it being given up to the hardy varieties of fruit and ornamental stock such as are adapted to successful culture in the latitude of Minnesota, and the northwestern provinces of Canada.

The Varieties Included in this Catalog,—and those omitted—have been so treated upon the bases of our own experience and consultation with the best authorities. If the average reader were to make a study of the different varieties of fruit now in cultivation, he would doubtless be surprised at the enormous length of the list. Every year new varieties are coming out and almost every year public opinion is casting others aside. It will be found therefore that many of the old varieties cataloged twenty-five years ago are missing in this edition.

What Constitutes Hardiness in fruit or other varieties of trees? It is their ability to resist drouth, whereby they make a healthy, vigorous growth in summer, and withstand the protracted cold drouth of winter. Can a given variety—for example, the Wealthy in apple, or rose in flowers—be helped so they will not be injured by drouth? They may, by thoro cultivation in summer which produces a strong growth and conserves the moisture; by mulching the ground so as to protect the tree's roots in winter; and by proper covering in winter for such tender varieties as the rose—all of which offer protection from the effects of drouth and makes them sufficiently hardy. We are always glad to give an opinion on hardiness or adaptability of a variety when requested.

Inspection. Our nurseries are annually inspected by the state entomologist as required by law. and we hold his certificate that our stock is free from injurious insects and contagious diseases.

ABOUT JEWELL TREES

MINNESOTA GROWN is the very best quality guarantee that can be put on nursery stock. It means hard and well-seasoned wood; it means more roots in proportion to tops; it means varieties that have been tested in our climate; and with many classes of stock it means a longer period of nursery growth, and hence greater vigor when dug. JEWELL TREES represent the best of what the North can produce, and many testimonials to that effect lead us to assert that they transplant easier everywhere on account of their splendid root development.

Purity of Blood in Trees means the same as purity of blood in animals. A successful breeder of fancy cattle maintains his standard by constantly selecting the truest types of the breed. In just this way JEWELL TREES have been brought up thru nearly forty years of painstaking culture to the highest standard of purity and vigor. To the planter, a few good trees, well cared for, always give more satisfaction than any amount of inferior stock, no matter how high the after culture. It pays to buy the best. Cheap nursery stock, like cheap machinery, is always the most expensive in the end. Quality counts—and quality must command its price to maintain its standard.

Our History in Brief. In 1868, Dr. P. A. Jewell, the veteran horticulturist of the upper Mississippi, established this nursery on ten acres of land, with one man and a horse and cultivator as his working force. To-day, as a proof of the fact that northern horticulture has become an assured success, the Jewell nurseries operate on twelve hundred acres of land, employ an average of over 100 men in the nursery and more than 700 salesmen and local agents in the sale of their products. Thru our Mail Order Department, JEWELL TREES are to-day planted in every part of North America, from Alaska to the Atlantic.

Soil and Location. After years of test we believe we have an almost ideal nursery location. In soil we have a great variation, adapted to all classes of stock, many of which differ in their requirements when young. Yet all of our soil is of that light, porous nature which produces a great amount of fibrous roots. We do not get the heavy growth of wood common to the more temperate parts of this country, but uniformly we do produce a much larger proportion of roots to the amount of branches, and that is what the intelligent buyer looks for.

Shipping Seasons. With a few exceptions, nursery stock may be delivered either in spring or fall of the year depending upon the convenience of the buyer. Evergreens and strawberries transplant more successfully when dug and shipped in the spring. Early blooming bulbs, such as tulips, hyacinths, crocus, etc., must be planted in the autumn. Our spring shipments are made in April and May, while in the fall they occur mostly in October.

Do We Grow the Stock We Sell? The following items from one year's inventory will give something of an idea of the demand for Jewell stock: 1,000,000 Apple and crab; 250,000 Plum; 50,000 Cherry; 55,000 Grape; 100,000 Currant; 75,000 Gooseberry; 175,000 Raspberry; 25,000 Blackberry; 10,000 Dewberry; 1,500,000 Strawberry; 225,000 Shade and Ornamental Trees; 200,000 Evergreens; 125,000 Ornamental Shrubs; 60,000 Climbing Ornamental Vines; 200,000 Hardy Herbaceous Plants; 50,000 Roses; 5,000,000 Seedling Shade Trees; 1,000,000 Carolina Poplar and Golden Willow; and four large greenhouses devoted to growing house and bedding plants.

HERBACEOUS PERENNIAL PLANTS FOR ORNAMENTAL PLANTING

THE PLANTS referred to under this heading comprise an extensive department of the Vegetable Kingdom and are known botanically as *herbaceous* plants. The word *herbaceous* (meaning "like an herb") refers to the nature of the branches above ground which are not hard and woody as are those of the shrubs and trees, and which consequently freeze back to the ground with severe winter weather. In any given latitude where the roots of such plants are hardy, they are referred to as *perennial* plants, meaning thereby that the roots remain alive and dormant in the ground "from year to year." This distinguishes them from the *annual* plants which must be raised from seed each season and the *biennials* which require two seasons for the development of flower and fruit.

The varieties of herbaceous ornamental plants most generally used and cataloged are, in the main, representatives of various genera found indigenous in almost every part of the inhabitable globe. From the Alps we have received many of the beautiful species of creeping plants so much used in rock work. Of recent years the Rocky Mountains have also furnished many desirable flowering plants. England, France and Germany have contributed a great many of the well known varieties found in the gardens of the past century, while each year finds new species added from the woods and waysides of the American continent. With the bringing of many of these wild flowers into cultivation has come a gradual improvement of type and, in many cases, the creation of new varieties.

Within the past decade there has been a remarkable increase of interest in the herbaceous perennial plants in ornamental gardening and they are now being planted in very much larger quantities, especially in the older settled portions of the country where their value has been longer determined. Their relative importance, as compared with the shrubs and trees, has never been so well appreciated as it has been since landscape gardening has taken a decided stand in the direction of natural arrangement as opposed to the old continental or artificial arrangement.

The hardy herbaceous perennials as a class are the easiest to manage, the cheapest and the most natural in effect of all the plants that grow. When once planted they need very little care. Many of them need none at all, and will thrive and multiply for years in the grass or among the shrubs without the slightest attention. Growing thus at full freedom they give a woodsey air to any place, large or small, which nothing else can furnish quite so well. The use of these plants are varied and depend very largely upon the taste of the planter and the nature of the grounds. They may be used in almost any situation where plants are wanted or will grow at all. They may be used under the trees, among the shrubs, in the rockeries, along the borders of ponds or rivulets, on sloping banks, on rocky or barren hillsides, in borders by themselves, in the shade, or in the sun. In fact, to the lover of plants who enjoys their study, there is hardly a spot on any ground which may not be made more beautiful with the use of plants in this list. It is a very convenient way to outline a border with herbaceous perennials, among and in front of which annual flowers may be planted from year to year. One of the best ways is to mix them with the shrubbery or place them at the foot of massed groups of shrubbery.

No ornamental lawn planting, whatever its extent, can be complete without a liberal proportion of these hardy flowering plants. The ease with which they are maintained is an important factor, but their great and varied

usefulness gives them a still wider importance. Not only do they enter into all features of landscape work, but by judicious selection they may at the same time be made to yield a profusion of bloom for in-door decoration thru six months of the year. In height they range from four inches to eight feet or more, thus offering proper gradation for massed groups in connection with shrubbery and a wide field of selection for specific purposes.

For borders along walks and drives; to front and flank shrubbery groups; on rockeries, natural or artificial; for covering rough ground that would otherwise be barren; for beautifying hillsides and bottomland; in the construction of the old fashioned garden; wild-wood effects in half hidden corners; banks of foliage and flowers against fences and walks; borders around foundations of buildings and walls; beds for cut flowers; temporary screens produced with the taller growing varieties—these and many others are the uses to which the hardy flowering plants may be put, and our list comprises the best things for accomplishing these combinations with almost unlimited variety for size, season and color. With a little care an assortment may be made that will furnish bloom thruout the summer.

A key to size and blooming period. To assist the buyer in making selections for groups and in their proper arrangement for planting, we give average height and season for blooming. It should, of course, be remembered that these figures only represent an *average*, as difference in soil and location even in the same state or county will give results that would differ. In average locations, however, in the latitude of the south half of Minnesota it will be found that both size and blooming period are about as listed. Farther north and in all colder latitudes the height is apt to be somewhat less and the blooming season a trifle later. In like manner, planters south of this section may, with some species, experience considerable more growth and a somewhat extended season of blooming.

HERBACEOUS PERENNIAL PLANTS

ACANTHUS—Bear's Breach

Acanthaceæ

A group of stately ornamental plants from the Mediterranean region, remarkable for their vigorous growth and beautiful foliage. Adapted for single specimen lawn planting, for sub-tropical effects and also for grouping. Prefers a rich tho light and well drained soil. The leaf of the Acanthus was copied by ancient Grecians for decoration of capitals of columns in the Corinthian style of architecture.

A. mollis. 3 ft. July-September. Greece. Deeply cut, shining foliage.

var. **latifolius.** 4 ft. July-September. Italy. Handsomest of the class, with elegant foliage and spikes of purple flowers.

ACHILLEA—Milfoil or Yarrow

Compositæ

Named in honor of Achilles, a pupil of Chiron, who first used it as a medicine. Free-flowering, herbaceous plants, of easiest culture and very valuable for borders and rock work, or in situations refused by more tender plants. The dwarf forms make good carpets in dry, sunny situations and the other sorts are admirable in the flower border. All are used to good effect in the wild garden.

A. Ægyptiaca. 18 in. June-August. Levant. Showy silvery, fern-like foliage. Pale yellow flowers.

A. eupatorium. 4 ft. June-August. Caspian Sea. Of bushy habit, with deeply-cut, clear green foliage and flat heads of bright yellow flowers.

A. millefolium var. **roseum.** (ROSY MILFOIL.) 12 in. June-August. America. Very finely cut, deep green foliage. Flowers bright pink in dense heads, on good stems for cutting.

A. Ptarmica var. **fl. pl.** (DOUBLE SNEEZEWORD.) 1 ft. June-August. Double, pure white flowers.

var. **The Pearl.** Larger flowers than above and in broader heads, with stiff upright stems. Admirable for cutting. One of the very hardiest and best border plants for exposed locations.

A. tomentosa. (WOOLY YARROW.) 6 in. June-July. England. One of the best creeping plants, with moss-like, deep green foliage and forming mats of verdure. Covered in June with flat heads of golden yellow flowers.

ACONITUM—Monkshood, Wolfsbane, Aconite

Ranunculaceæ

Chiefly natives of Europe but partly North America and Japan. They grow freely and are good plants for the open border in which they are chiefly valuable on account of their tall, erect stems. All the species are more or less poisonous, the poison being strongest in the root. The plants should not be disturbed as they increase in size with age.

A. atumnale. 4 ft. September-October. China. The latest bloomer of the class, with deep blue flowers in panicles.

A. Californicum. (CALIFORNIA MONKSHOOD.) 2½ ft. September-October. America. Pale blue, veined with purple. Valuable for its fall flowers.

A. Fischeri. 3 ft. September-October. Pale blue flowers. Thrives in either sun or shade.

A. Lycotomum. (WOLFSBANE.) 4 ft. July-August. Europe. One of the showiest, with branching spikes of yellow or creamy flowers. Very poisonous. Nothing succeeds better under trees and in shady places.

A. Napellus. (HELMET FLOWER.) 3 ft. July-September. Switzerland. Dense heads of deep blue flowers.

ACORUS—Flag

Araceæ

A well known genus of marsh plants, natives of the United States, Europe and Asia.

A. calamus. (SWEET FLAG.) 18 in. The common Sweet Flag of our northern marshes. The roots are valuable and used for spicing and candies.

var. **variegata.** (VARIEGATED FLAG.) 2 ft. America. Foliage distinctly striped with white. Choice for border.

ACTÆA—Baneberry

Ranunculaceæ

These are native plants common to our northern woods. The berries are poisonous. Their chief value is for shady spots.

A. alba. (WHITE BANEERRY.) 2 ft. June. America. Pure white berries with red stocks.

A. Japonica. 2½ ft. September-October. A Japanese introduction, with flowers much like the native varieties but valuable for its late blooming.

A. spicata. (RED BANEERRY.) 2 ft. June. America. Scarlet berries in long spikes.

ADONIS

Ranunculaceæ

Natives of Europe and Asia. Plants with showy foliage, thriving best in moist, sandy loam. Especially effective in rock work.

A. Davurica fl. pl. 8 in. May-June. A beautiful Japanese species with large, full, double yellow flowers and fern-like foliage.

A. vernalis. (OX-EYE.) 1 ft. May-June. Europe. Finely cut foliage and showy, bright yellow, anemone-like flowers.

AGROSTEMMA—Rose Campion

Caryophyllaceæ

Showy border plant, suited to all garden soil. Flowers are attractive, especially in contrast with the silvery foliage.

A. coronaria. (MULLEIN PINK.) 3 ft. June-July. Italy. Bright crimson flowers.

A. Flos-Jovis. (FLOWER OF JUPITER.) 1 ft. June-July. Europe. Deep pink flowers.

AJUGA—Bugle

Labiataæ

A small genus once esteemed for supposed medicinal virtues. They are dwarf plants, adapted to any garden soil and valuable in the flower border.

A. Genevensis. (GENEVA BUGLE.) 6 in. May-June. Switzerland. Broad clumps of tufted foliage, with bright blue flowers in long, dense spikes.

A. reptans. (MIDDLE COMFREY.) 6 in. May-June. Purple flowers in spikes. Good for shady banks.

var. **foliis rubra.** Foliage richly covered with purple.

var. **foliis variegata.** Foliage splashed and spattered with cream.

ALETRIS—Japan Star-Grass*Hamodoraceæ*

A. Japonica. 2 to 3 ft. June-July. Japan. A medium-sized perennial with grass-like foliage and spikes of deep purple flowers. Does best in rich soil.

ALSTROMERIA—Peruvian Lily, Chilian Lily*Amaryllidaceæ*

A genus of tuberous rooted plants from South America. All are very free bloomers and successful in any good, well-drained soil.

A. aurantiaca. 2 ft. July-September. Chili. Showy, orange-colored flowers; lily-like.

A. Chillensis. 18 in. July-September. Chili. Deep yellow flowers, spotted and streaked with yellow and brown.

ALTHEA—Hollyhock*Rosaceæ*

The Hollyhock was introduced from China in 1573 since when it has spread to gardens all over Europe and America. They are indispensable plants in the garden or border, possessing a character peculiar to themselves which renders them especially valuable to break up any set effect in lawn planting with their towering spikes of showy flowers. As usually treated, the Hollyhock is a biennial, but if planted in rich loam where the water will not settle around the crown in the winter, they become a valuable addition to our perennial list. These are furnished in all the most desirable colors and in both the single and double forms.

ALYSSUM—Madwort*Cruciferae*

Dwarf, semi-shrubby plants with cruciferous flowers. The plant commonly called Sweet Alyssum is not of this genus.

A. argenteum. 1 ft. May. Switzerland. Yellow flowers in clusters. Silvery foliage. Dwarf.

A. saxatile var. **compactum.** (GOLD DUST.) 1 ft. May-June. Silvery foliage. Handsome heads of brightest, golden yellow, fragrant flowers which completely cover the foliage. Valuable for both border and rockery.

A. serpyllifolium. 4 in. July-August. Italy. A low growing species, with small silvery foliage and bright, lemon-yellow flowers. Showy for the rockery.

AMSONIA*Apocynaceæ*

A. Tabernæmontana. 2 ft. June-July. America. A South American species, forming a bush-like plant with willow-like foliage and dense terminal spikes of clear blue flowers.

ANCHUSA—Alkanet*Boraginaceæ*

A vigorous Italian plant with broad, rough foliage and terminal heads of deep blue flowers. If not allowed to go to seed, it will bloom almost continuously.

A. Italica. 3 to 4 ft. June-September. Italy. Deepest blue flowers in large panicles.

ANDROSACE—Rock Jasmine

Primulaceae

A small genus from the Alps. In their native habitat they thrive on rock work and in crevices and are particularly desirable for similar uses in the garden.

A. carnea. 6 in. June-July. Switzerland. Dwarf, tufted foliage surmounted by showy, flesh-colored flowers.

ANEMONE—Wind Flower

Ranunculaceae

This genus offers several varieties of showy flowering plants and are desirable in all gardens. In blossoming, the different varieties cover almost the entire summer. They are desirable either in the garden or border and work in well on shady places where many other flowers fail to succeed.

A. Japonica. (JAPANESE WIND FLOWER.) 2 ft. September-November. A distinct and beautiful species with very large flowers of bright purplish-red with yellow centers. Blooms until frost. Introduced from Japan in 1884.

var. **alba.** [*Honorine Jobert.*] Pure white form of the above. Choice for cutting purposes.

var. **Queen Charlotte.** Large, semi-double flowers of a pleasing pink shade, much like La France rose.

var. **Whirlwind.** A variety producing large, double white flowers in great profusion in the autumn.

A. pulsatilla. (PASQUE FLOWER.) 6 in. May. Europe. Fern-like foliage with large mauve flowers. The well known flower that appears in the early spring on warm slopes almost before any of the trees have started to bud.

A. sylvestris. (SNOWDROP ANEMONE.) 9 in. May-June. From Asia. Cup-shaped, pure white flowers on clean stems, and held well above the neat, handsomely cut foliage. At home in partial shade.

ANTHEMIS—Chamomile

Compositae

An interesting genus, a number of the varieties being valued for medicinal properties and the *tinctoria* furnishes a yellow dye.

A. tinctoria. (HARDY GOLDEN MARGUERITE.) 2 ft. July-September. Europe. A plant of dense, bushy habit, covered with heads of yellow showy flowers. Succeeds in even the poorest soil.

var. **Kelwayii.** An improvement over the above, with deeper yellow flowers and finer cut foliage.

ANTHERICUM—St. Bruno's Lily

Liliaceae

Well known border plants and valuable in all gardens where fine color effects are desired.

A. liliago. (ST. BERNARD'S LILY.) 18 in. June-July. Europe. Showy spikes of pure white flowers resembling small lilies. Foliage is grass-like, forming neat clumps.

A. liliastrum. (ST. BRUNO'S LILY.) 18 in. June-July. A beautiful plant with narrow, grass-like foliage and spikes of small, fragrant, lily-like flowers.

var. **major.** (GIANT ST. BRUNO'S LILY.) 2 to 3 ft. Baden. A large-growing form of the above and with larger flowers which are borne in profusion.

AQUILEGIA—Columbine*Ranunculaceæ*

A well known class of hardy plants adapted to almost all soils and indispensable in any perennial border or garden. They offer a wide variation in shade, form and blooming period. There are a large number of varieties under cultivation of which we list the best.

A. Canadensis. (WILD HONEYSUCKLE.) 18 in. June-July. America. The common American species, with brilliant and scarlet flowers.

A. cærulea. (ROCKY MT. COLUMBINE.) 1 ft. July-August. Rocky Mountains. Very large flowers, often four inches across, with deep blue sepals and pure white petals and four long recurved spurs. A fine species for the border or base of rockery in well drained loam.

A. chrysantha. (GOLDEN SPURRED COLUMBINE.) 3 ft. July-August. Colorado. Bright golden flowers with long, thread-like spurs. Fragrant. An elegant border plant.

A. glandulosa. (ALTAIAN COLUMBINE.) 1 ft. June. Siberia. A choice species with deep blue sepals and pure white petals and very short spurs.

A. Skinnerii. (MEXICAN COLUMBINE.) 3 ft. July-September. Crimson sepals lined with light green. Light green petals and long straight, crimson spurs.

A. vulgaris fl. pl. (EUROPEAN VARIEGATED COLUMBINE.) 3 ft. June-July. Europe. Extremely double flowers, in colors ranging in different plants from pure white to deep blue and purple, or combinations of these colors.

ARABIS—Rock-Cress*Cruciferae*

A genus from Arabia which furnishes many valuable varieties for rock and border planting. Well adapted to cover steep, dry banks as they are good drought resisters.

A. albida. (MOUNTAIN ROCK CRESS.) 6 in. May. Caucasus. Pure white, fragrant flowers, borne in close heads on leafy stems, and in great profusion.

A. alpina. (WHITE ALYSSUM.) 6 in. May. Switzerland. Foliage in rosettes of glossy, deep green, forming a dense carpet, with heads of pure white flowers.

ARENARIA—Sandwort*Caryophyllaceæ*

A. Balearica. (BALEARIC SANDWORT.) 3 in. June-August. Balearic Islands. Dense, moss-like foliage of brightest green color. Flowers pure white, prettily studding the foliage when in bloom. Will grow on nearly vertical rocks.

A. cæspitosa. 2 in. July-August. Switzerland. A handsome little Alpine plant. Moss-like foliage in dense masses, with starry white flowers.

ARMERIA—Thrift, Sea Pink*Plumbaginaceæ*

A genus of ornamental plants of dwarf habit common on the rocky sea-coast of Britain. They grow with freedom in almost any soil, without regard to situation. They bloom more or less continuously thruout the summer.

A. argentea. 4 in. July-August. Small white flowers and narrow foliage.

A. maritima. (CUSHION PINK, THRIFT.) 8 in. July-August. England. Foliage in tufts, deep green and grass-like, studded at intervals thruout the summer with rich purple flowers in dense heads on clean stems.

var. **alba.** Flowers pure white. Very distinct.

A. plantaginea var. **formosa.** 18 in. July-August. Italy. A rich and effective variety, with deepest crimson flowers. A free bloomer, with blossoms on clean stems and choice for cutting purposes.

ARTEMESIA—Wormwood

Compositæ

Useful and quite ornamental plants, thriving in ordinary soil. Tho not remarkable for their flowers, the foliage is very ornamental and of pleasing, aromatic odor.

A. abrotanum. (SOUTHERN WORMWOOD.) 3 ft. August. Europe. Dark green, finely cut foliage, possessing a pleasant aromatic odor.

A. absinthium. (COMMON WORMWOOD.) 3 ft. July-August. Europe. Deeply cut, silvery foliage.

A. Dracunculus. (TARRAGON.) 3 ft. July-August. Spain. Dark green pointed foliage, with a peculiar aromatic flavor, sought for flavoring soups and other dishes.

A. frigida. (SILKY WORMWOOD.) 1 ft. September. Siberia. One of the most beautiful of the genus, with very finely-cut foliage. Will thrive in poorest of soil.

A. stelleriana (SILVERY WORMWOOD.) 1 ft. July-August. Europe. Deeply cut, silvery foliage. Used mostly for hedging.

ARUM

Araceæ

Curious plants; thriving in any light soil in sunny locations. All have showy foliage which gives a pleasing effect in the border, while the flowers are curious and interesting.

A. Dracunculus. (BROOK-LEEK.) 3 ft. July. Europe. Broad, handsomely marked foliage. White flowers.

A. Italicum. 1 ft. June. Italy. Pure white flowers and handsomely marbled foliage.

ARUNDINARIA—Ribbon Grass

Graminaceæ

A. folius variegata. (VARIEGATED RIBBON GRASS.) This belongs to a large genus of grasses found in both North and South America. It is of strong and vigorous growth, the foliage attaining a height of 18 inches or more. The leaves are striped longitudinally with green and cream color. It is very valuable for all border purposes as it produces a dense growth that renders it unexcelled where a clean cut line is desired.

ARUNDO—Reed Grass

Graminaceæ

A valuable genus for use in creating tropical effect in the garden and frequently used where it is hardy. They make noble specimens, and also work in well with other grasses and in connection with shrubs.

A. donax. 10 ft. Spain. Towering straight stems of deep green, clasped at regular intervals with broad, pointed foliage.

var. **variegata** Foliage beautifully variegated with stripes of silver and green.

ASCLEPIAS—Milkweed—Silkweed

Asclepiadaceæ

An extensive genus of tall growing plants, characterized by their curious flowers and silky appendages upon the seeds.

A. incarnata. (SWAMPY MILKWEED.) 3 to 4 ft. July. America. Showy heads of bright reddish-purple flowers.

A. tuberosa. (BUTTERFLY-WEED.) (PLEURISY-ROOT.) 2 ft. July. America. The most ornamental of the genus. Broad foliage, with showy heads of deep orange-yellow flowers.

ASPERULA—Woodruff or Maitrank*Galiaceæ*

A. odorata. 6 in. June-July. Germany. A very pretty dwarf plant with whorled leaves and small, white fragrant flowers in summer. Valuable for covering purposes in shady situations. The foliage is of a particularly pleasing flavor, and is often used for flavoring summer drinks.

ASPHODELINE*Lilacææ*

A. luteus. 3 ft. July-August. Sicily. Dense spikes of clear yellow, fragrant flowers, lasting for a long time on the plant. Lily-like in effect. A good plant for the border, thriving in ordinary soil.

ASTER—Starwort—Michælmass Daisy*Compositæ*

There are upwards of one hundred and fifty species included in this genus, most of them being hardy herbaceous plants and particularly useful in the garden for their autumn flowers. They generally attain a height of from two to four feet, producing blossoms in different shades of white, purple and blue. They are all of easy culture and thrive in ordinary soil, and nearly all of them are hardy in the North. Our list comprises the very best selected varieties. These beautiful and showy plants should be found in every collection.

A. alpinus. (ALPINE ASTER.) 6 in. July. Europe. Showy purple flowers, each on good stems for cutting. Choice for the front of border.

var. **alba.** Pure white flowers, very dwarf.

var. **speciosus.** Beautiful, deep blue flowers.

A. amethystinus. 3 to 4 ft. September-October. Amethyst-blue. Beautiful flowers of a very delicate shade.

A. Chapmanii. 4 to 5 ft. September. America. Showy, light blue flowers in immense, broad-branched heads.

A. longifolia var. **formosa.** 15 in. August-September. America. Dwarf and dense in habit, bush being covered with a mass of starry, deep rose-purple flowers.

A. mellus. (ITALIAN STARWORT.) 3 ft. September. Light blue.

var. **Bessarabicus.** 2 ft. July-August. Russia. Large deep purple flowers with yellow centers.

var. **elegans.** Large, light blue flowers.

A. Novæ Angliææ. (NEW ENGLAND ASTER.) 4 to 5 ft. September-October. America. Large heads of clear, deep purple flowers with bright yellow centers. One of the most conspicuous.

var. **rosea.** Large heads of clear pink flowers. A rich variation and a valuable addition to the list.

A. Novæ-Belgiææ var. **Lady Trevellyn.** 3 ft. September-October. America. A form giving large heads of pure white flowers with yellow centers. The panicles are often 15 to 18 inches long.

A. ptarmacoides. (BOUQUET STARWORT.) 18 inches. September-October. America. Flat, open heads of pure white flowers. Well adapted for cutting purposes.

A. Robert Parker. 4 ft. September-October. Lavender. The flowers are produced in large sprays, and it is one of the most satisfactory.

A. Tartaricus. 5 ft. October. Purple flowers. One of the showiest and latest of the class.

A. White Queen. 3½ ft. September-October. Flowers pure white, of good size and broad petals.

ASTILBE—Japan Spiræa, False Goat's Beard*(Rosacææ)*

A. Chinensis. 18 in. July-August. China. Handsome foliage, finely cut, and of a pleasing shade of green.

A. Japonica. (*Spiraea Japonica* or *Houteia Japonica*.) 2 ft. June-July. Japan. A handsome plant with small, pure white flowers in large, branching panicles. Much used for winter forcing.

var. **grandiflora** (*Multiflora* var. *compacta*.) An improvement over the type for forcing purposes, and has also become a plant of merit for garden culture.

ASTRAGULUS—Milk Veitch

Leguminosæ

A. alopecuroides. 3 ft. June-July. Siberia. A bushy plant, with showy spikes of clear yellow flowers.

A. Monspessalanicus. (MONTPELIER MILK VEITCH.) 9 in. June-July. France. Handsome, deep cut foliage and showy spikes of deep purplish flowers.

AUBRETIA—Purple Rock Cress

Cruciferae

Another valuable class of plants for use in rock planting where it is indispensable.

A. deltoidea. 3 in. April-May. Levant. Of dwarf tufted habit. Purplish flowers produced abundantly in early spring.

BAPTISIA—False Indigo

Leguminosæ

B. Australis. 2 ft. June. America. Deep green, deeply cut foliage. Showy spikes of dark blue flowers. A free growing plant in ordinary soil, and well adapted to the border or wild garden. Prefers a sunny position.

BELLIS—English Daisy

Compositæ

Fine plants for the border or for spring bedding. Should be well covered for winter.

B. perennis. 6 in. May. Europe. Comes in all shades of colors, mixed, and in forms varying from single to very double.

BOCCONIA—Plume Poppy

Papaveraceæ

B. cordata. (*Japonica*.) 6 ft. August-September. China. A showy, vigorous-growing plant, with deeply cut, handsome, glaucous foliage. Makes a fine single specimen, bearing large panicles of creamy white flowers.

BOLTONIA—False Chamomile

Compositæ

A class much resembling the Asters, yet giving a far different effect. They are of easy culture and a fine addition to the autumn list.

B. asteroides. 3 ft. September. America. Pure white flowers.

B. latisquama. 4 ft. September-October. America. The flowers are pink, slightly tinged with lavender, and are produced in immense heads bearing hundreds of blossoms.

BUPHTHALMUM—Ox-Eye

Compositæ

B. salicifolium. 18 in. August-September. Austria. Showy yellow flowers and produces a very pretty, medium-sized plant.

CALIMERIS

Compositæ

C. incisa. 1 ft. July-September. Tartary. A showy, medium-sized plant with purple flowers having deep yellow centers. Produces well, even on light soil.

CALLIRHÆ—Poppy-Mallow

Malvaceæ

C. involucrata. 1 ft. June-October. America. A fine trailing plant with cut foliage and a succession of deep crimson flowers with yellow centers. Produces a beautiful effect wherever planted.

CAMPANULA—Hairbell or Bellflower

Campanulaceæ

An extensive and well known genus consisting of more than two hundred species, some of which are biennials and others perennials. Only the perennials are here listed. They offer a wide variation in the shades of blue and white.

C. barbata. (BEARDED HAIRBELL.) 1 ft. June-July. France. Long, tubular, light blue flowers in clusters. An Alpine sort.

C. Carpathica. (CARPATHIAN HAIRBELL.) 9 in. June-September. Austria. Of dwarf, compact habit. Flowers deep blue, on good stems for cutting and borne in continuous succession thruout the summer.

var. **alba.** Pure white flowers. Very effective.

C. glomerata var. **Dahurica.** 2 ft. June-September. Europe. An erect grower with showy heads of flowers of a bluish-purple color. Also known as Cluster Bellflower.

C. grandiflora. (See under head of *Platycodon*.)

C. latifolia. 3 to 4 ft. June-July. Europe. Rather large, broad leaves, forming a neat bush covered with showy heads of long, deep blue flowers.

C. macrantha. 3 to 4 ft. June-July. Russia. The vigorous stems of this species are terminated with showy spikes of large, deep blue flowers.

C. media. (CANTERBURY BELL.) An ornamental garden flower of easy culture. The flowers vary in color between blue, red, purple and white. It should properly be classed among the biennials.

C. nobilis. (LARGE HAIRBELL.) 1 ft. June-July. China. Heart-shaped foliage and clusters of creamy-white flowers tinged with chocolate. Odd and very effective.

C. persicæfolia. (PEACH-LEAVED HAIRBELL.) 18 in. June-August. Europe. Long, narrow, deep green foliage and tall spikes of bell shaped flowers. Blue.

var. **alba.** 18 in. June-July. White. Very showy and one of the best for cutting.

var. **gigantea mœrheimi.** A beautiful new variety attaining a height of 18 to 24 inches and producing in June and July spikes of pure white, double, camellia-like flowers.

C. punctata. 1½ to 2 ft. June-July. Flowers of a whitish color, striped and spotted with red.

C. pyramidalis. 3 ft. August-September. One of the showiest of its class. Broad handsome foliage with blue flowers on tall branched spikes.

C. rotundifolia. (BLUEBELLS OF SCOTLAND.) 1 ft. June-August. America and Europe. Narrow foliage on multitude of branches. Fine, clear blue flowers in clusters.

C. Trachelium. 4 ft. July-August. England. Rough, heart-shaped foliage, with terminal clusters of deep purple flowers.

C. Van Houtteii. 2 ft. June-August. Japan. Showy heads of handsome, deep blue flowers.

CARDAMINE—Cukoo Flower or Bitter Cress

Cruciferae

C. prætensis var. **fl. pl.** (DOUBLE CUKOO FLOWER.) 1 ft. June. England. Handsomely cut foliage and clusters of double, light pink flowers. A charming plant for the garden and especially delights in a moist spot in rich loam.

CASSIA—Wild Senna

Leguminosae

C. Marylandica. 4 ft. July-August. America. Forms a shrub-like bush with handsomely cut foliage. Thrives even on poor soil. Showy, dense spikes of pea-shaped yellow flowers spotted with black.

CATANANCHE—Cupidone

Compositae

Of easiest culture in light, well-drained soil on sunny exposures.

C. caerulea. 2 ft. June-August. Italy. Showy, deep blue flowers.
var. **bicolor.** White flowers with blue eyes. Very effective.

CENTAUREA—Centaury, Knapweed

Compositae

An extensive genus of plants, both the perennial and annual branches of which are valuable in ornamental gardening. They are all of easy culture.

C. atropurpurea. 3 ft. July-September. Hungary. Showy globular heads of purple flowers.

C. Babylonica. 3 ft. July-September. Levant. Dense, globular heads of bright yellow flowers.

C. declinata. (*dealbata*) 18 in. July-August. Caucasus. Compact habit of growth, with handsomely cut light green foliage and clusters of showy, light pink flowers with white centers.

C. macrocephala. 3 ft. July-August. Caucasus. A tall-growing plant with showy foliage and terminal spikes of deep yellow flowers.

C. montana. 2 ft. July-August. Austria. Rich, deep purple flowers; very good for cutting.

var. **alba.** Pure white flowers in profusion.

var. **rosea.** Clear red flowers.

var. **Lady Hastings.** Lilac-rose flowers.

C. nigra variegata. (VARIEGATED BUTTON WEED.) 2 ft. July-August. America. Gold and green variegated foliage in early spring, followed by deep purple flowers.

CENTRANTHUS—Valerian

Valerianaceae

A small genus of flowering plants introduced from Grenada about 1849. Flowers borne in corymbose panicles.

c. ruber. (RED VALERIAN OR JUPITER'S BEARD.) 2 ft. June-July. England. Showy spikes of deep crimson flowers.

var. **alba.** (WHITE VALERIAN.) A pure white flowered form.

CERASTIUM—Mouse-Ear, Chickweed

Carocephyllaceae

C. Bierbesteinii. 6 in. June-July. Caucasus. Broad, silvery foliage, with pure white flowers. Valuable for forming carpets in dry, sunny spots, and for use on steep banks.

C. tomentosum. 5 in. June-July. Europe. Bright silvery foliage, with pure white flowers. The brightest of the species and like the former, is valuable in dry open locations and on sunny banks.

CHELONE—Turtle Head, Shell Flower

Scrophulariaceæ

These plants succeed well in ordinary garden soil and are valuable for their late bloom.

C. glabra. 2 ft. September-October. Spikes of creamy-white flowers in autumn.

C. Lyonii. 2 ft. September-October. Carolina. Heads of deep red flowers.

C. obliqua var. **alba.** 2 ft. August-September. New England. Clusters of pure white flowers.

CHRYSANTHEMUM—(Hardy)

Compositæ

A large and important genus of herbaceous plants of which the Ox-eye Daisy of our field is a well known representative. None of the varieties here quoted should be confused with the well known greenhouse flower generally known as Chrysanthemum. This latter species is the *C. sinense* or Chinese Chrysanthemum.

C. Leucanthemum hybridum. (SHASTA DAISY.) Originated by Mr. Luther Burbank of California. It is well known from the magazine illustrations where it has been introduced with others of Mr. Burbank's horticultural creations. The flowers are very large; color white with golden center. They are bold in effect and profusely borne on good stems for cutting.

C. maximum var. **triumph.** (MOONPENNY DAISY.) 2 ft. August-October. White. The flowers are very large and pure white with a golden center. They are borne on strong stems and last well when cut.

CHRYSANTHEMUM—(Hardy Pompon)

These beautiful, small flowered varieties are again coming to the front. They are hardy and produce an abundant profusion of bloom and the plants lend a coloration to the garden just at a time when other plants have been destroyed by frost and are looking their worst. Frost does not materially effect the flowering. Our collection embraces all the colors.

CIMICIFUGA—Snake Root

Ranunculaceæ

C. racemosa. 4 ft. July-September. America. Well suited for the back portion of a border or for naturalizing at the edge of woods. Flowers pure white on long spikes.

CLAYTONIA—Spring Beauty

Portulacaceæ

Spring bloomers, of easy culture in common soil, succeeding best in half shady spots in the rockery.

C. virginica. 6 in. May. America. Clusters of light pink flowers.

CLEMATIS—Virgin's Bower

Ranunculaceæ

An extensive genus of handsome climbing shrubs or woody herbaceous plants, many of which are low growers and valuable in the hardy rockery and garden. Many of them are natives of North America, while others come from Europe, China, and Japan. The strictly climbing varieties will be found under the head of Climbing and Trailing Shrubs.

C. coccinea. (SCARLET CLEMATIS.) 4 ft. June-September. Texas. Deep crimson, bell-shaped flowers with yellow throats.

C. crispa. (LEATHER FLOWER.) 6 ft. June-August. Carolina. Showy deep lavender, bell-shape flowers with pure white throats.

C. Davidiana. 3 ft. August-September. China. Bushy habit of growth, with tubular, blue flowers in clusters. Decidedly fragrant.

C. erecta. 4 ft. June-July. Austria. Dense, bushy habit. Handsome pure white flowers in large, showy clusters.

C. integrifolia. 2 ft. July-August. Hungary. Upright habit of growth. Flowers deep blue, large and freely produced.

C. vitacella. 8 ft. July-August. Spain. A splendid variety with a profusion of bloom. Flowers are of a pleasing reddish-purple and the foliage gives a fine effect. Makes a rapid growth.

CONVALLARIA—Lily of the Valley

Liliaceæ

C. majalis. 6 in. May-June. The Lily of the Valley is too well known to need description. Its spikes of pure white flowers and charming fragrance have made it a favorite for many centuries. In recent years it has become an important item on the forcing list of cut flower growers and is used in great quantity in the cities during the winter months.

COREOPSIS—Tick Seed

Compositæ

Most of the showy annuals formerly known by this name are now called Calliopsis, while most of the perennial species are left in this genus. They are all commendable for the flower border and several are valuable for cutting.

C. grandiflora. 3 ft. June-October. America. Large, deep yellow, cup-shaped flowers, each on a long clean stem, making it especially valuable for cutting purposes. A continuous bloomer during its season.

C. lanceolata. 2 ft. June-October. America. Deep golden-yellow flowers. Not so large as *grandiflora* but of a very rich color and an equally continuous bloomer.

C. verticillata. 18 in. June-September. America. Narrow foliage in dense whorls. Small lemon-yellow flowers in constant succession thruout the summer.

CORONILLA—Crown Veitch—Wild Pea

Leguminosæ

C. varia. 1 ft. June-September. Europe. Handsome globular heads of showy, bright pink and white, pea-shaped flowers. A rapid creeper and useful for covering banks and wild ground. Also a handsome border plant, under restraint.

CYPRIPEDIUM—Lady Slipper or Mocassin Flower

Orchidaceæ

The state flower of Minnesota. A genus of terrestrial orchids producing flowers of the most singular structure. The native species may be cultivated in a garden by placing them in a well drained, shady border. The soil should be liberally mixed with leaf mould.

C. pubescens. The common yellow Mocassin Flower of our northern woods. Flowers on leafy stems, bright yellow with long curled sepals.

C. spectabile. This also is native to the northern states but not so often found. Flowers are similar in shape to the former, but larger, and in color a pure white touched and blushed with crimson.

DELPHINIUM—Larkspur

Ranunculaceæ

Well known and valuable perennial plants with ornamental foliage. They are all free-flowering and of easy culture. The tall growing sorts are admirable

for the back portion of the border and for grouping among shrubs. By preventing the flowers from going to seed, the plants will bloom continually until hard frosts.

D. Chinensis. 3 ft. July-October. China. Large open panicles of handsome flowers, varying from deepest blue thru all lighter shades to pure white and deep lavender; in some cases with single shades only, in others with all possible combinations of these colors.

var. *alba*. A pure white form of the above.

D. elatum. (BEE LARKSPUR.) 4 ft. June-August. Siberia. Deep blue flowers with dark violet petals on very long spikes.

D. formosum. 4 ft. June-September. Large, deep blue flowers with pure white eyes, and in showy, long spikes. One of the choicest.

var. *celestinum*. 4 ft. June-July. Very pale blue flowers with lavender center.

DIANTHUS—Hardy Pink, Sweet William

Caryophyllaceæ

Most of the species of this genus are highly valued for the beauty and fragrance of their flowers. They possess probably more shades of color than any other class, while the well known carnation fragrance is delightful to all. In this classification we include only the strictly hardy out-door pinks or garden pinks, and the *D. barbatus* or Sweet William which also belongs to the genus.

D. barbatus. (SWEET WILLIAM.) 18 in. June-July. Germany. An old flower garden favorite. It sports into endless varieties of color—white, pink, purple, crimson and scarlet, and many sorts variously edged, eyed or spotted.

D. deltoides. (MAIDEN PINK.) 6 in. May-June. England. A charming creeping variety of very dwarf habit, with deep red, crimson-eyed flowers.

D. plumarius. (SCOTCH PINK.) 9 in. June-July. Scotland. This is strictly what is known as the hardy Grass Pink or Garden Pink. There are now many cultivated varieties of superior quality, nearly all with a decided carnation fragrance. The foliage is grass-like, very thick and makes a good border. The flowers are borne on good, clean stems. We list the following varieties as among the very best.

Abbotsford. Deep carmine marbled with white. Rich clove fragrance.

Essex Witch. Variegated. Reddish-purple with narrow lacing of white.

Gertrude. Rosy-carmine, veined with silvery white.

Her Majesty. Pure white, very double, with exquisite clove-like fragrance.

Homer. Rich crimson. Double. Clove scented; finely fringed.

Juliet. Cherry-red. Variegated pink and white; fragrant.

Mrs. Sinkins. Pure white. A prolific bloomer; very fragrant.

Napoleon III. Bright red. Early bloomer.

Souvenir de salle. Center day-break pink, bordered with pure white.

Variabilis. White, deep maroon center.

DICENTRA—Dielytra, Bleeding Heart

Fumariaceæ

After years of learned discussions among botanists as to the derivation of the name *Dielytra*, it is now accepted that it was erroneously changed from *Dielytra* which, in the first instance, was accidentally printed for *Dicentra*. They form a very ornamental class of bordering plants both for flower and foliage and are of easy culture in moderately rich soil.

D. eximia. 18 in. June-September. America. Fern-like foliage and short racemes of flesh-colored flowers on long stems.

D. formosa. 1 ft. June-July. America. Very similar to *eximia* in both foliage and flower, except that both the leaves and blossoms are much smaller.

D. spectabilis. (BLEEDING HEART OR SEAL FLOWER.) 3 ft. June. Siberia. This popular species was found by Mr. Fortune in gardens in the north of China, and was first sent to London by him in 1846. Long racemes of showy, heart-shaped, red and white flowers. By far the handsomest of its tribe, and will grow both in shady or sunny locations, but blooms more freely when given plenty of sun.

DICTAMNUS—Fraxinella—Gas Plant

Rutaceæ

A small genus of hardy, herbaceous plants, and among the oldest inhabitants of the cottage garden. It is a native of Germany. When rubbed the leaves emit an odor, like that of lemon peel. The whole plant emits a resinous or oily matter which may be readily ignited, especially in warm weather.

D. fraxinella. (GAS PLANT.) 3 ft. June. Germany. Showy, purple flowers, penciled with deeper lines.

var. **alba.** Pure white flowers.

DIGITALIS—Fox Glove

Scrophulariaceæ

A small and showy genus of perennial plants of easy culture. They prefer a rich, loamy soil and partial shade. Certain species are used in medicine.

D. ambigua or **grandiflora.** (YELLOW FOXGLOVE.) 2 ft. July-August. Switzerland. Showy, pale-yellow flowers veined with brown.

D. gloxiniaeflora. 2½ ft. June-July. Europe. A popular variety, ranging in color from pure white to deep pink.

D. lanata. 2 ft. June-July. Hungary. Grayish yellow flowers, marked with brown spots. Very long spikes. Very compact and showy.

D. purpurea. (COMMON FOXGLOVE, FAIRY FINGERS or WITCH'S FINGERS.) 4 to 5 ft. July. England. This variety is not grown in separate colors, but generally produces flowers which range in color from white, creamy white, rose and pink to purplish-red. Has been much used of late years in public and private parks.

DODECATHEON—Shooting Star—American Cowslip

Primulaceæ

An interesting genus of herbaceous plants native to the northern states. They are exceedingly handsome in cultivation and thrive well in the shady border. The flowers are much like the Cyclamen in shape.

D. integrifolium. (AMERICAN COWSLIP.) 9 in. May. America. Deep rose-crimson flowers with black and yellow eyes.

D. meadia. 1 ft. America. One of the choicest of our native perennials, with broad tufty foliage and tall, upright flower stems surmounted with showy, purplish-reddish flowers with rich orange-yellow eyes.

DORONICUM—Leopard's Bane

Compositæ

Sometimes known as Dog's Bane but this is not correct. The *Doronicum* are one of the most effective of our perennials. They are also valuable for winter forcing in a conservatory or window garden. They succeed under almost all conditions and are worthy of a place in every garden.

D. caucasicum. 1 ft. May. Austria. Handsome, glossy green foliage and showy heads of large, clear yellow flowers.

D. excelsum. 18 in. May-June. Europe. Showy, deep orange-yellow flowers in great profusion. Flowers often four inches across.

DRACOCEPHALUM—Dragon's Head

Labiata

A small genus of garden flowers introduced from Asia in 1731. They are of easy culture and well adapted to damp locations.

D. altaianse. 1 ft. July-August. Asia Minor. Long spikes of clear pink flowers, each nearly two inches in length.

D. Ruyschianum. 2 ft. July-August. Europe. Whorls of purplish-blue flowers.

ECHINACEÆ—Cone Flower*Compositæ*

E. augustifolia. 3 to 4 ft. June-August. America. Long, lance-like foliage, with showy, deep red or purple flowers.

E. purpurea. (PURPLE CONE FLOWER.) 3 ft. July-August. America. Furry, lanceolate foliage. Flowers very large, deep purple.

ECHINOPS—Globe Thistle*Compositæ*

A genus of hardy plants of large growth and suitable for certain kinds of gardens. They are too rank growers for moderate sized gardens. Valuable for producing sub-tropical effects.

E. ritro or **Ruthenicus.** 3 ft. July-September. Russia. Handsome foliage, deep green above, silvery beneath. Flowers bright metallic-blue in globular heads.

E. sphærocephalus. 5 ft. August-September. Austria. Light green foliage and light blue flowers.

EPILOBIUM—Willow Herb*Onagraceæ*

E. augustifolium. 4 ft. June-August. America. A free growing plant, thriving in light soil and adapted to naturalizing in meadows. White and deep pink flowers on showy spikes.

EPIMEDIUM—Barren Wort*Berberidaceæ*

A genus of dwarf-growing plants with leathery foliage and panicles of showy flowers. Nearly all varieties assume beautiful tints in autumn.

E. Alpinum. 15 in. May-June. England. Showy panicles of red and white flowers.

E. macranthum. 15 in. May-June. Japan. Lilac-purple flowers which rival some of the richest orchids.

E. niveum. 9 in. May-June. Persia. Showy spikes of pure white flowers.

E. sulphureum. [*pinnatum.*] 9 in. May-June. Persia. Long spikes of deep yellow flowers.

ERIANTHUS—Ravenna Grass*Graminaceæ*

E. Ravennæ. 4 ft. Introduced from Europe in 1824. A rival of the Pampas Grass; not so beautiful but hardier. Produces graceful plumes in great abundance in autumn. Thrives best in sunny locations.

ERINUS*Scrophulariaceæ*

A small genus of hardy Alpine plants and suitable for rock work or other similar planting. They should always be placed in dry locations as they will not stand too much water. First introduced in the garden in 1779.

E. alpinus. 4 in. May-June. Pyrenees. Showy spikes of deep purple flowers in clouds.

var. **alba.** Pure white flowers.

var. **carmineus.** Crimson flowers.

ERIGERON—Fleabane

Compositæ

E. speciosus. [*Stenactis speciosus.*] 2 ft. June-August. California. A handsome border plant of bushy habit. Large, violet-blue flowers, with finely cut petals, and bright yellow centers. Good stems for cutting.

ERODIUM—Heron's Bill

Geraneaceæ

The name Stork's Bill is sometimes erroneously applied. The name Heron's Bill comes from the resemblance of the seed pod to the bill of that bird. That of the Pelegonium resembles a stork's bill and that of a geranium a crane's bill.

E. manescevil. 1 ft. June-August. Europe. Showy clusters of deep red flowers.

ERYNGIUM—Sea Holly

Umbelliferae

An extensive genus of plants, with many herbaceous varieties common thruout Europe. They have handsome foliage, with large, candelabra-shaped flower stems and showy flowers. The stems of the flowering branches usually assume the same shade as that of the flower, producing a neat effect.

E. amethystinum. 3 ft. July-September. Styria. Thistle-like heads of amethyst blue.

E. yuccæfolium. [*Aquaticum.*] (RATTLESNAKE PLANTAIN.) 3 ft. August. America. Sword-like foliage resembling Yucca. Flowers bluish-white in tall branched heads.

E. planum. 2 to 3 ft. July-August. Europe. Light blue flowers.

EULALIA

Graminaceæ

A genus of ornamental Japanese grasses introduced into this country by Mr. Thomas Hogg about 1871. Where hardy, it thrives luxuriantly in ordinary garden soil.

E. Japonica. 4 ft. Japan. Deep green leaves.

var. **variegata.** Foliage beautifully striped with green and gold.

var. **zebrina.** (ZEBRA GRASS.) A most remarkable and handsomely variegated form, with a golden variegation in horizontal bands across the leaf at regular intervals. This is a very unusual thing in the coloration of grasses or any other foliage.

E. Japonica var. **gracillima.** 4 ft. Japan. Long, narrow, deep green leaves with white midribs.

EUPATORIUM—Thoroughwort—Snake Root

Compositæ

An extensive genus, many of which come from South America. They are all excellent plants for the rear of the border and are of easy culture.

E. argeratoides. (WHITE SNAKE ROOT.) 3 ft. September-October. America. Dainty white flowers in dense terminal heads.

E. cælestinum. 2 ft. July-September. Light blue flowers similar to the Ageratum.

E. Frazerii. 3 ft. September-October. Colorado. Pure white flowers.

E. purpureum. 6 ft. August-September. America. Immense branched heads of showy, reddish-purple flowers.

EUPHORBIA—Milkweed or Spurge*Euphorbiaceæ*

E. corollata. (FLOWERING SPURGE.) 18 in. July-September. America. Broad umbels of white flowers, with a small green eye. An excellent plant for dry spots on banks or for the rockery. Flowers are borne on good stems for cutting.

FUNKIA—Plantain Lily*Liliaceæ*

Named in honor of Henry Funk, a German scientist. A handsome genus of herbaceous plants from Japan. It is nearly allied to *Hemerocallis*, and some of the species first introduced were included in that genus, which has caused considerable confusion in names. Admirable plants for moist soils.

F. cærulea. 1 ft. June-July. Light blue flowers with dark green, glossy foliage. Flowers borne on tall showy spikes.

F. grandiflora [*subcordata*.] (CORFU LILY.) 18 in. August-October. Japan. Heart-shaped, light green foliage and clusters of fragrant, pure white flowers in constant succession.

F. lancifolia var. *variegata*. 1 ft. July-August. Japan. Flowers pale lilac. Foliage margined with creamy white and yellow.

GAILLARDIA—Blanket Flower*Compositæ*

Named after M. Gaillard, a French botanist.

G. aristata var. **grandiflora.** 1 ft. June-September. Texas. These are among the showiest and most desirable of the perennials. The flowers are often three inches in diameter and borne on good stout stems for cutting. The markings of the individual flowers differ widely, being in all shades of deep orange-yellow marked with a well defined, broad band of deep maroon and with a dark maroon center.

GALEGA—Goat's Rue*Leguminosæ*

These make stout, bushy plants well adapted for growing in a border. They are of graceful habit and bear an abundance of flowers on showy spikes.

G. officinalis. 3 to 4 ft. July-August. Spain. Spikes of rosy-purple flowers.

var. **alba.** Pure white flowers.

GALIUM—Bed=Straw, Cleavers*Galaceæ*

G. boreale. 3 ft. June-July. Europe. Large, finely branched panicles of minute white flowers. Grows in any soil and is very useful for cutting purposes.

GENTIANA—Gentian*Gentianaceæ*

An extensive genus found in nearly all parts of the world, some on dry hillsides and others in damp and swampy grounds. All of the plants of this genus are pretty and many are extremely beautiful.

G. acaulis. (GENTIANELLA.) 3 in. May-June. Wales. Deep green, leathery foliage and showy deep blue flowers.

G. alba. (WHITE GENTIAN.) 18 in. August-September. America. Pure white flowers in dense heads.

G. Andrewsii. (CLOSED GENTIAN.) 18 in. August-September. America. Dense, showy heads of deep blue, closed flowers. One of the best.

GERANIUM—Crane's Bill

Geraniaceæ

A choice group of foliage and flowering plants, thriving in common garden soils and form bushy, well shaped plants. The house plants commonly known as Geraniums are really Pelargoniums.

G. ibericum. 2 ft. July-August. Levant. Handsome foliage. Broad open heads of deep purple flowers, veined with lighter purple.

G. prætense. 1 ft. July-August. England. Crow foot leaves. Flowers lilac purple.

G. sanguineum. 18 in. June-September. England. Perhaps the handsomest of its class. Compact in habit, with beautiful cut foliage and crimson-purple flowers thruout its season. An excellent plant for either rockery or border.

GEUM—Avens

Rosaceæ

A genus of hardy, herbaceous perennials containing several species of ornamental value for the shrubbery border.

G. coccineum. 2 ft. June-September. Alps. Myriads of bright scarlet flowers.

G. montanum. 1 ft. June-July. Alps. Showy heads of bright yellow flowers.

G. triflorum. (APACHE PLUME.) 9 in. May-June. Dakota. Bright red flowers followed by silvery, feathery heads of seeds.

GILLENIA—Bowman's Root

Rosaceæ

G. trifoliata. 3 ft. July-August. America. Has been also cultivated under the name of (*Spirea trifoliata*.) A strong growing, bush-like perennial, admirable for a border or in connection with shrubs. Handsome, trifoliate foliage and numerous white flowers slightly tinged with pink.

GLECHOMA—Ground Ivy

Labiataæ

G. hederaceæ variegata. (VARIEGATED GROUNDSELL OR GROUND IVY.) A useful variegated creeper for growing over banks and stones in the rockery. Foliage silvery and green variegations. Does best in well drained soil. Liable to kill out where it is moist.

GLOBULARIA—Globe Daisy

Globulariaceæ

G. tricosantha. 6 in. July-August. Spain. A showy, tufted plant forming neat rosettes of deep green, oval leaves and bearing dense heads of dark blue flowers. Thrives well at the front of well drained borders, but is especially showy in the rockery.

GYPSOPHILA—Chalk Plant

Caryophyllaceæ

The species of this genus, mostly natives of Europe and Asia, are characterized more by the grace than by the striking beauty of their flowers. The flowers are small, but are produced in great numbers in loose, graceful panicles on stiff, wiry stems. Often used in making up dry bouquets as they retain their color during winter.

G. acutifolia. 4 ft. August-September. Siberia. A tall-growing variety and a late bloomer. White flowers tinged with pink.

G. paniculata. (BABY'S BREATH—INFANT'S BREATH.) 3 ft. July-August. Siberia. An excellent sort for cutting. The minute white flowers are borne in large panicles.

G. repens. (CREEPING CHALK PLANT.) 6 in. July-September. Siberia. Choice plants for dry banks or over rocky ledges. Showy white flowers deeply tinged with pink.

G. Stevenii. 2 ft. June-July. Siberia. Of bushy, spreading habit. White flower, somewhat larger than *Paniculata*.

HELENIUM—Sneezewort, Sneeze Weed

Compositae

A small genus of showy, hardy herbaceous plants. The flowers are mostly of good size, somewhat resembling the Rudbeckia. All are of easy culture in ordinary garden soils.

H. autumnale. (COMMON SNEEZEWEED.) 5 to 6 ft. September-October. America. Broad heads of deep golden-yellow flowers. One of the choicest of the hardy, tall-growing plants.

H. Bolanderii (*grandiflorum*). 2 ft. June-July. America. Flowers deep yellow with brown center. Peculiarly winged stems.

H. grandicephalum. 3 ft. August-October. An erect, vigorous grower. Flowers orange, striped with crimson, in large branching heads.

H. pumillum, 18 in. July-September. America. During its flowering season, covered with golden-yellow blossoms. A favorite cut flower in England where it is grown by the acre.

HELIANTHEMUM—Sun Rose

Rosaceae

Low, shrubby plants that are ever green where hardy. Useful in some places for rock work.

H. hyssopifolium. 6 in. June-July. Italy. Deep copper-colored flowers, often two inches across.

H. vulgare citrinum. 6 in. June-July. England. Single yellow flowers.

HELIANTHUS—Sunflower

Compositae

The varieties here listed should not be confused with the common annual sunflower which is grown from seed. The perennial varieties offer many choice species. We list some of the best.

H. decapetalus. 4 ft. September. America. Free-blooming form with clear yellow flowers.

H. Maximiliana. 6 ft. September-October. Minnesota. One of the latest bloomers. The flowers are of a clear yellow and very large. Produced on long, graceful sprays. Valuable for cutting.

H. mollis. (HOARY SUNFLOWER.) 4 ft. September-October. America. Thick, silvery foliage. Flowers lemon-yellow.

H. multiflorus var. fl. pl. (DOUBLE MEXICAN SUNFLOWER.) 4 ft. July-August. Large, double, dahlia-like, yellow flowers in profusion.

H. multiflorus var. maximus. 5 to 6 ft. July-September. Mexico. This variety bears very large, golden-yellow flowers, often six inches and more in diameter. One of the showiest.

H. orgyalis. (GRACEFUL SUNFLOWER.) 6 ft. September-October. Texas. Flowers of medium size, golden-yellow; borne on very long, graceful stalks.

H. rigidus. 3 ft. July-October. Flowers golden-yellow with dark centers. One of the lowest growing varieties.

HELIOPSIS—Ox-eye, Orange Sunflower

Compositæ

H. lævis var. **Pitcheriana**. 3 ft. June-October. An improved variety of *Heliopsis* and the best of the genus. A useful plant for places where the *Helianthus* grows too large. This variety gives a succession of deep orange-yellow flowers thruout the season. Flowers are of a thick texture and very graceful for cutting. A choice plant in every way.

HELLEBORUS—Christmas Rose

Ranunculaceæ

H. niger. 1 ft. March-April. Austria. These are among the earliest plants to bloom, in some locations coming into flower in the open ground in March and April. In the East, when given protection, it will bloom by Christmas, hence its name. It has evergreen foliage, with large clusters of pure white flowers with yellow anthers.

HEMEROCALLIS—Day Lily

Liliacæ

These are excellent plants with grass-like foliage and dark orange colored flowers borne in panicles on long stems. They are exceptionally hardy, thriving in any good soil and are especially adapted to moist and shady places.

H. aurantiaca var. **major**. 18 in. July. Japan. Sweet scented, trumpet-shaped flowers which, on well established plants, often measure five inches across.

H. Dumortierii [*rutilans*, *Sieboldii*.] 18 in. June-July. Japan. A fine variety with flowers of a soft, rich yellow, with a bronzy orange exterior.

H. flava. (YELLOW DAY LILY.) 2 ft. June-July. Siberia. Bright yellow flowers. Very fragrant.

H. fulva. (TAWNY DAY LILY.) 2½ ft. July-August. Levant. Flowers deep tawny yellow.

var. **Kwanso**. (DOUBLE ORANGE LILY.) 2½ ft. July-August. Flowers orange yellow, shaded copper.

var. **Kwanso variegata**. 2½ ft. July. Flowers orange yellow. Especially attractive for its beautiful foliage, which is marked with a stripe of white down the middle of each leaf.

HEPATICA—Liver-Leaf

Ranunculaceæ

H. triloba. 6 in. April. America. Flowers white, pink or lavender. A handsome plant with bronzy foliage. Excellent for shady places and rockery.

HESPERIS—Rocket

Cruciferae

H. matronalis. 3 ft. June-August. Europe. A vigorous-growing, bush-like plant, with showy terminal spikes of pink flowers. A rampant grower and best for the wild garden.

HEUCHERA—Alum-Root

Saxifragaceæ

These are neat growing, showy plants, native both to this country and Siberia. They have good foliage and form compact, ornamental clumps. Flowers borne on long stems well above the foliage. Prefer a sunny location but will grow in the shade.

H. sanguinea. 18 in. June-September. Colorado. Flowers produced on long, graceful spikes in the greatest profusion. In color it varies from light red to crimson, giving a dazzling effect when in full bloom.

var. **alba**. A white flowering form of the above, with all its desirable points.

HIBISCUS—Mallow*Malvaceæ*

Virgil's name for the Marsh Mallow. One of the showiest of the herbaceous plants and an excellent variety for planting in dark, damp or moist ground but it does not need these conditions to insure its success.

H. militaris. 5 ft. August. A very tall species with flesh-pink flowers, tinged with deeper color toward center.

H. moschuetos. (SWAMP ROSE MALLOW.) 4 to 5 ft. August. New England. Flowers varying from light purplish-red to white, with darker eye.

var. **Crimson Eye.** One of the showiest of herbaceous plants and one of the finest for massing. Flowers white with crimson center. Single. Very large and striking, often measuring five inches in diameter.

var. **roseus.** (ROSE MALLOW.) Clear pink flowers. Very effective.

HIERACIUM—Hawk Weed*Compositæ*

H. aurantiacum. 6 in. June-September. Scotland. Flat heads of showy orange-red flowers. Rapid spreading plants, best adapted for growing in dry spots or covering steep slopes.

IBERIS—Hardy Candytuft*Cruciferae*

I. sempervirens. 1 ft. May. Candia. Innumerable flat heads of pure white flowers. One of the choicest for cutting. They form beautiful dwarf plants, with rich foliage which is literally covered with flowers in early spring. Exceptionally good for borders and rockeries.

INULA—Flea-bane*Compositæ*

I. ensifolia. 6 in. August-October. Austria. Common varieties of this plant are found on the roadsides in many parts of the United States. This European species, however, is one of the most ornamental. Showy bright yellow flowers. A handsome compact plant of dwarf growth. Admirable for the border and other similar purposes.

IRIS—Rainbow Flower, Fleur de Luce, Fleur de Lis*Iridaceæ*

The national flower of France. There are two large and distinct families into which the Iris is usually divided, one with the creeping fleshy root-stalk or rhizomes which includes all the varieties listed in this catalog, the other section includes the bulbous kinds which are principally represented in cultivation by what are known as the English and Spanish Iris. Both of these latter are found described in our annual catalog of autumn bulbs. The section here described is a very large genus and claims over a hundred distinct varieties. Of these we list the ones that have given the most general satisfaction in the north central states. Perhaps no other class of hardy plants present such a variety of coloring, beauty of flower, grace and delicacy as the Iris. By some they have been compared to the Orchid and they certainly have a much wider field of utility. Invaluable for group planting on the lawn, they are likewise indispensable as a vase flower. The flowers are borne on long stems which bring them well up above their own foliage and that of other plants when grown in borders and beds.

The tuberous Irises are divided into several classes as follows: *Iris Lævigata* or *Kæmpferii*, the Japan Iris, *Iris Germanica*, the German Iris, and a group known as the Alpine Iris. There are also several lesser groups and distinct species which we list together.

IRIS LAEVIGATA (*Kämpferii*), Japanese Iris

These are of comparatively recent introduction and their beautiful coloring and large blossoms have quickly made them the most important of all of the Irises in the estimation of many planters. They are fine border plants, flowering mostly in June. In congenial situations they grow 2½ to 3 ft. and on stems considerably longer. (S) signifies single, (D) double flowers.

Antelope. (D) White ground, marbled with red and purple; yellow center.

Apple Blossom. (S) White, spotted with pink.

Blue Beard. (D) Intense blue thruout.

Bluebell. (S) Purplish-blue; golden yellow at base.

Blue Danube. (S) Pure rich blue; yellow center.

Blue Jay. (D) Three petals, self-colored, deep bluish plum.

Bo-peep. (S) French white, veined with lavender.

Commodore Perry. (D) Large, blue; petals yellow at base.

Delicata. (S) Cream and white.

Diana. (D) White, veined with violet purple.

Eclipse. (D) Pure white with gold center.

Emperor. (D) Large, handsome, purple.

Eugene. (S) White, with blush center.

Gold Bound. (D) Pure white; base of petals golden yellow.

Granite. (S) Purple, flaked with white.

Gypsie. (D) Lavender and white; rich color.

Hannibal. (D) White, veined with purple.

Hyde Park. (D) Reddish-purple, blotched with white.

Isabella. (D) Pale blue, changing to ashy gray.

J. C. Vaughan. (D) Dwarf, pure white.

Mahogany. (D) Dark red, shaded maroon.

Mt. Hood. (D) Deep blue; of good form.

Mrs. C. T. Saxon. (D) Pure white; very large.

Navaho. (S) Pink ground, veined with lavender.

Navy Blue. (S) Rich dark blue; yellow at base.

Norma. (D) Deep lavender shaded yellow at base.

Orion. (D) Reddish-pink, with white center.

Oscar. (S) Rosy white, veined with lavender.

Painted Lady. (S) White, suffused and striped with pink.

Paragon. (D) Rich velvety purple.

Prince C. de Rohan. (D) Deep, shining dark blue.

Princess Clothilda. (D) Ash gray, blushed with purple.

Pyramid. (D) Violet-purple, veined white.

Quakeress. (S) Pink, veined with blue; yellow center.

Red Riding Hood. (D) Fine amaranth, veined with white.

Robert Craig. (D) French gray, tinted with purple on center petals.

Souvenir. (S) Rosy pink, with blue veins.

Spaulding. (S) Rosy purple; pure white center.

Stella. (S) Pure bright azure.

Templeton. (D) Violet, shaded with pink and flaked with white.

Vesta. (S) Pink, veined with white; center purple.

Victor. (D) Blue-white, veined with violet.

Violet Cap. (S) Purple and white; distinct shades.

William Fell. (D) White, veined with indigo.

Zenobia. (D) Purplish-pink, shaded and veined with white.

IRIS GERMANICA, German Iris

This class of Iris has been the longest propagated and therefore the best known. They bloom early and in their coloring the variety is almost endless, comprising every shade of purple, bronze, gold, blue, white, etc. These plants are unsurpassed for growing in low, damp ground and even on the margins of water, but they succeed admirably also on the lawn and in the shrubbery border. They bloom in June mostly, and a good selection will cover several weeks. (S) denotes the Standards or erect petals. (F) refers to the Falls or droop-

ing petals. Where no distinction is made between the colors of Standards and Falls, it is understood that both are of the same shade.

Abou Hassen. (S) Rich yellow; (F) yellow striped with brown.

Albicans. (PRINCESS OF WALES.) Pure white; one of the best.

Amœna Unique. (S) French white; (F) violet, suffused white.

Asiatica. (S) Clear blue; (F) rich violet. A new and handsome variety.

Augustina. (S) yellow; (F) yellow and maroon.

Celeste. Delicate pale lavender.

Cengialti. (S) Light blue; (F) purple tinted.

Darius. (S) Soft rich yellow; (F) lilac.

Edina. (S) Light purple; (F) violet, shaded purple.

Falcata. Yellow, tinged and striped with purple.

La Tendre. Violet and lavender.

Madam Chereau. White, elegantly fringed with azure blue.

Pallida speciosa. (MLLE. ALMIRA.) Light indigo blue; very large.

Pancrea. (S) Buff; (F) purple.

Pearl. Large, white; very handsome.

Queen of Gypsies. (S) Bronze; (F) purplish-red.

Sampson. (S) Golden yellow; (F) maroon.

Walneriana. Decided deep dark blue; very early.

NEW HYBRID ALPINE IRIS

A new and distinct race of Iris, the result of over twenty years work in hybridization by an enthusiastic specialist on the Island of Guernsey. All are very useful varieties not only in the border but they are also valuable for forcing. They furnish large fragrant flowers valuable for table decoration in small vases and bowls. Bloom from late April to late May. Where the description is similar, the flowers either bloom at different times or are quite distinct. (S) signifies Standard or erect petals. (F) signifies Falls or drooping petals.

Adelaide. Bluish white

Alice. Rich yellow, brown veined

Alida. White

Atlas. (S) Crimson; (F) deep maroon

Aureole. Canary

Beatrice. (S) Fawn; (F) pale yellow

Berlioz. Rich purple

Charmer. Light cream

Clothilde. Dwarf, purple flowers

Curiosa. (S) Sulphur; (F) purple

David. (S) Pale purple; (F) claret

Eldorado. Large flowered, blue

Elfrida. Yellow, orange red

Ernest. Sulphur gray, purple

Evelyn. Sulphur and orange

Goethe. Soft yellow, Falls veined

Gandee. Rich purple, large

Haydn. White, porcelain purple

Ianthe. Primrose shade

La Perle. Pale sulphur

Mazarin. Primrose yellow

Meteor. Purple

Milton. Yellow and orange

Nimrod. Red, good shade

Obelisque. Rich deep purple

Othello. Purple, bronze and orange

Penelope. Rich yellow

Queen. Sulphur

Rosalie. Claret

Rosine. White

Sabrina. Purple

Scott. (S) Sulphur; (F) gray

Uranus. Reddish-purple

Venus. Blue, green and white

Vergo. Purple

Vestal. Primrose

Vivian. Yellowish-white

Voltaire. Sulphur white, with blotched Falls

IRIS PUMILLA, Crimean Iris

A beautiful group resembling the German Iris, only growing from 9 to 18 inches high, which makes them very valuable everywhere for use either in connection with taller varieties or when planted by themselves. They are remarkable for their vigorous growth and the marvelous profusion of flowers. Most of them are very fragrant. Among these are a number of improved hybrids. The flowering season is quite extended, hybrid varieties coming a trifle later. (S) signifies Standard varieties or upright petals. (F) Falls or drooping petals.

- Beauty.** (S) Rich cream yellow; (F) pale yellow, flushed purple.
Bridesmaid. (S) White, faintly stained pale lavender; (F) yellow flushed with blue.
Canary Bird. (S) Rich canary yellow; (F) deep yellow.
Conspicua. (S) French gray; (F) sulphur stained purple.
Cyanea. Rich, royal purple with blackish shadings.
Eburna. Pure white, with creamy-white shadings.
Florida. Lemon-yellow, shaded with darker yellow.
Formosa. (S) Violet-blue; (F) light violet.
Niobe. (S) Bright purple; (F) dark blue.
Orange Queen. (S) Bright orange; (F) deep orange, flushed purple.

OTHER IRISES

- I. atrovioleaceæ.** A tall grower, producing delicate violet blossoms in late May.
I. aurea. 2 ft. June-July. Himalayas. Bright yellow flowers. One of the finest of all the Irises.
I. cristata. (CRESTED IRIS.) 6 in. June. Carolina. Short stalked flowers of a light shade of blue, fringed and spotted with orange and yellow.
I. flavescens. 18 in. June. China. Pale yellow flowers. A very effective variety.
I. Florentina. (ORIS ROOT, WHITE IRIS.) 2 ft. June. Italy. Pure white, fragrant flowers.
I. pseud-acorus. (WATER FLAG.) 2 ft. May. Europe. Clusters of deep yellow flowers, followed by showy scarlet berries.
I. Siberica. (SIBERIAN IRIS.) 2 to 3 ft. June. Siberia. One of the best. Forms a well shaped clump and bears profusely deep blue flowers in clusters on long stems.
 var. **alba.** Pure white flowers.
 var. **orientalis.** Much darker blue than Siberica and blooms earlier.

LATHYRUS—Perennial Pea

Leguminosæ

- L. latifolius.** (EVER-BLOOMING OR PERENNIAL PEA.) 8 to 10 ft. June-October. Europe. This belongs to the Sweet Pea family but it is a hardy perennial instead of an annual. The flowers are of various shades of pink and red. They are larger than those of the Sweet Pea and practically odorless, blooming in profusion thruout the summer. They are very valuable not only for cut flowers but also for general ornamental planting. When trained to trellis or fence, they will attain a height of six to eight or even ten feet.
 var. **alba.** A white variety of the above.

LAVANDULA—Lavender

Labiata

- L. vera.** (COMMON LAVENDER.) 18 in. June-August. This is the variety grown so largely in England and France for its essential oil which is used in perfumes and toilet water. It has deep blue flowers of a most penetrating and pleasing odor. Handsome silvery foliage. A good plant for the border.

LEPACHYS

Compositæ

- L. pinnata.** 5 ft. August-September. America. Showy plants of easy culture in common garden soil and well suited for back of border and for growing among shrubs or for naturalizing. Lemon-yellow flowers with drooping petals and purple, cone-like centers.

LIATRIS—Blazing Star*Compositæ*

This genus consists of some twenty species common from New York to Kansas and southward. They all produce flowers in long spikes which begin to flower at top of spikes and continue to open downward. They are very pretty border plants and are successful even in poor soil.

L. gracilis 4 ft. August. Slender spikes of feathery purple flowers.

L. graminæfolia. var. **calosa.** 4 to 5 ft. September. Purple bloom nearly entire length of stalk.

L. pycnostachya. (KANSAS GAY FEATHER.) 3 to 4 ft. September. Kansas. Rose-purple flowers in long spikes which are often bent and twisted.

L. spicata. 2 ft. July. New England. Deep purple flowers. One of the earliest.

L. squarrosa. 2 ft. August. Minnesota. Rose-purple flowers in dense long spikes.

LILIUM—Lily.*Liliacæ*

This extensive genus of beautiful flowering plants belongs chiefly to the bulb catalog and the leading varieties will be found in our annual catalog of autumn bulbs. The following is the only one that is perfectly hardy in the Northwest and may be classed among the hardy perennials.

L. tigrinum. (TIGER LILY.) 3 to 4 ft. July-August. Bright red, marked with large purplish spots. A well known old garden plant which is always popular for certain effects, and will produce superb results when planted in masses. Succeeds in almost any soil.

LINUM—Flax*Linacæ*

L. perenne. (PERENNIAL FLAX.) 12 to 18 in. June-September. England. Clear blue flowers. These plants thrive especially well in light soil and are therefore valuable in rockery work. They are seldom out of bloom during the season.

var. **album.** A pure white flowered variety.

LOBELIA—Cardinal Flower*Lobeliacæ*

Named in honor of Mathew Lobel, a botanical author. An extensive genus of herbaceous plants from which we have obtained several ornamental varieties. They require a deep moist loam. When given this condition, they are a valuable addition to the border, producing a very rich color effect.

L. cardinalis. 2 ft. September. America. The flowers of this variety are of an intense bright scarlet and are one of the showiest of all our native flowers.

L. fulgens. var. **Queen Victoria.** 2 ft. August-September. Deep scarlet. Foliage bronzy crimson, rich and effective.

L. syphilitica. (BLUE LOBELIA.) 2 ft. August-September. Forms a compact bush with spikes of blue flowers carried well above the foliage.

LUPINUS—Lupin*Leguminosæ*

Bush-like plants that thrive in deep loamy soil, and produce dense spikes of handsome pea-shaped flowers. A good border plant.

L. perennis. 2 ft. June-July. America. Spikes of light blue flowers.

L. polyphyllus. 3 ft. July-August. Oregon. Tall spikes of deep blue flowers.

var. **alba.** A white form of the above.

LYCHNIS—Lamp-Flower

Caryophyllaceæ

A group of very ornamental, herbaceous plants, most of them entirely hardy and deserve a place in every garden. In fact no good border planting can well be carried out without them and the dwarf species are valuable for rock work as well. Should be given good soil.

L. Chalcedonica. (LONDON PRIDE.) 2 to 3 ft. July-September. Russia. Flowers vermillion scarlet. Excellent for cutting purposes. One of the oldest cultivated, being an old garden favorite from Russia.

var. **alba.** A pure white flowered form.

var. **fl. pl.** Double crimson flowers in showy heads.

L. viscaria. var. **splendens.** (GERMAN CATCHFLY.) 2 ft. July. Bright, deep rose-pink flowers.

L. viscaria var. **splendens plena.** (RAGGED ROBIN.) 15 in. June-July. Large, double; a fiery rose color.

LYSIMACHIA—Loose-Strife, Moneywort

Primulaceæ

L. clethraoides. (LOOSE-STRIFE.) 18 in. July-September. Flowers pure white. A tall, robust grower with foliage which colors very richly in the autumn and the flowers are excellent for cutting purposes.

L. nummularia. (MONEY-WORT.) 4 in. June-August. England. Flowers deep yellow. A low creeping plant, excellent for planting under trees. It forms a dense green carpet against which the bright flowers are quite showy.

LYTHRUM—Purple Loose-Strife

Lythraceæ

L. alatum. 4 ft. September-October. America. A handsome, upright-growing plant with square stems and tinted foliage. Flowers deep rich purple in showy, long spikes.

L. roseum superbum. 3 to 4 ft. July-September. A strong growing, shrub-like plant, producing large spikes of rose-colored flowers. Excellent for use in shrubbery border and low swampy ground.

MALVA—Mallow

Malvaceæ

M. Alcea. (HOLLYHOCK MALLOW.) 3 to 4 ft. June-October. Germany. Showy pink flowers, borne freely thruout the summer.

M. moschata. (MUSK MALLOW.) 2 ft. June-August. England. A low spreading bush, with a profusion of showy, rose-purple flowers.

var. **alba.** A white flowered form of the above.

MERTENSIA—Lungwort

Boraginaceæ

M. Virginia [*pulmonarioides*]. (VIRGINIA COWSLIP, BLUEBELL.) 1 ft. May-June. Virginia. Graceful little plants loving a rich loam. Flowers a light blue. Successful in either rockery or border.

MONARDA—Horsemint

Labiataæ

These plants are very desirable both for their ornamental and aromatic foliage and their showy flowers. They produce splendid effects when planted in masses and are successful in almost any soil.

M. didyma. (OSWEGO TEA OR FRAGRANT BALM.) 2 ft. July-September. America. Showy heads of brilliant scarlet flowers.

var. **splendens**. 2 ft. August-September. Intense rich crimson-scarlet.

M. fistulosa. (BERGAMOT.) 3 ft. June-September. America. Flowers pale red to purple-rose.

MYOSOTIS—Forget-me-not

Boraginaceæ

This well known genus of plants scarcely needs description. They thrive in moist, half shady places and will also grow to good advantage in the border.

M. alpestris. (ALPINE FORGET-ME-NOT.) 6 in. May-June. Switzerland. Small bushy plants. Light blue, yellow-eyed flowers in spikes.

M. palustris. 1 ft. May-June. Europe. The old well-known variety. Fine light blue flowers with yellow center. A broad spreading plant.

var. **semperflorens**. (EVERBLOOMING FORGET-ME-NOT.) A most desirable variety of the above. Seldom out of bloom from early spring until midsummer, and again from early autumn until frost.

CENOTHERA—Evening Primrose

Onagraceæ

A very useful class of garden plants. Elegant summer and autumn bloomers and succeed in ordinary soil. They prefer sunny situations. All but one of the varieties quoted are all-day bloomers.

C. eximia [*marginata*]. 6 to 8 inches. June-August. Colorado. Flowers very large, often four to five inches across. Color pure white, changing to light pink. Flowers borne on good stems above the foliage, which is long and jagged. The flowers open at the approach of evening and remain in bloom during the night. Fragrant.

C. fruticosa var. **major**. (SUN DROPS.) 2 ft. June-September. America. Large heads of showy, cup-shaped, rich, golden-yellow flowers.

C. fruticosa var. **Youngii**. June-August. 2 ft. America. An excellent sort, of stocky growth and a profuse bloomer of lemon-yellow flowers.

C. Missouriensis [*macrocarpa*]. 2 ft. June-July. America. A spreading plant with showy yellow flowers from four to six inches across.

C. speciosa. (TALL WHITE EVENING PRIMROSE.) 18 in. June-October. America. Succession of pure white flowers changing to pink. Charming for cutting purposes. Fragrant.

ONPHALODES—Creeping Forget-me-not

Boraginaceæ

O. verna. 6 in. May-June. Italy. A charming low-growing perennial with creeping shoots, heart-shaped leaves and brilliant blue flowers like the Forget-me-not. Succeeds best in shady spots in good soil. Foliage forms a dense carpet.

OPHIPOGON—Snake's Beard

Hæmodoraceæ

O. Jaburan var. **aureus variegatus**. 6 in. August-September. These form broad, neat clumps with handsome foliage which is prettily striped with golden-yellow. The flowers are light blue, on showy, long stemmed spikes. An excellent variety for the rockery.

PACHYSANDRA—Mountain Spurge

Euphorbiaceæ

P. terminalis. 8 in. May-June. A pretty evergreen plant where hardy, thriving in all soils and making a dense carpet of bright green foliage. The white flowers are borne in small spikes. A choice cover plant.

PAEONIA—Pæony

Ranunculaceæ

Named after the Greek physician, Peon, who is said to have employed it in a medicine. The Pæonias best known to our gardens are divided into two groups, *Pæonia Moutan*, the Tree Pæony, all of which are of a more or less shrubby growth, and the herbaceous varieties which are generally classed under the head of *Pæonia Chinensis* or the Chinese Pæony. The first class will be found under the chapter on Deciduous Shrubs; the last is the one here described. Of the herbaceous species *P. Officinalis*, the old double crimson Pæony, was the first introduced into English gardens, having been brought from Switzerland in 1548, where it is indigenous, as well as in many other parts of Europe and Asia. *P. albiflora*, the old double white, came from Siberia about the same time, and *P. tenuifolia* was introduced from Russia in 1765. One or two herbaceous species have been found in Oregon and California, but are inferior to the European species. The true Chinese Pæonies, which now with their hybrids include most of the varieties under cultivation, were introduced by Mr. Fortune, a well known botanist. They are among the noblest and most beautiful hardy plants. They not only combine stateliness of growth with beauty and diversity of color, but have a wide variety of uses both for ornamental planting and for cutting.

They succeed admirably in any loamy soil and may be made to thrive in the shady parts of the lawn where other flowering plants refuse to bloom. For bordering walks and driveways and for the flower garden, an assortment of Pæonies is quite indispensable. Our list includes some of the choicest varieties that have been tested on our grounds. By making proper selection, the blooming period may be extended in many locations from the middle of May to the end of June. They offer a range of color from pure white to deep purple, and many of them are fragrant.

PAEONIA CHINENSIS, Chinese Pæony, Double Varieties

NOTE:—The nomenclature of the Pæony is in a more or less chaotic state owing to the absence of a standard such as is furnished rose fanciers by the various societies devoted to the culture of that flower both in this country and Europe. The American Pæonia Society, which has recently taken up the work with much enthusiasm, will, we hope, soon place the matter in a more orderly condition. This will doubtless result in reducing the number of varieties, a few of which are probably identical and some others which are nearly so.

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| Admiral Dewey. Guard petals deep rose; pink and cream center. | Atrosanguinea. Dark red, tinged with violet. |
| Agida. Dark rich red. | Augusta Mieliez. Guard petals pink; lemon center; fragrant. |
| Agnes Mary Kelway. Outside light rose; yellow center with rose tuft. | Baron de Rothschild. Rose with salmon center. |
| Alba Perfecta. Pure white. | Barrymoor. Cherry red. |
| Alba Plena. Blush white. | Bayard. Bright violet. |
| Albicans. White. | Beaute Francaise. Delicate rose. |
| Alexander Dumas. Pink; fragrant. | Belle of Crescent. Bright rose, very showy. |
| Alexandriana. Light pink, silvery edges; fragrant. | Belle Hough. Light crimson. |
| Alice. Blush rose changing to white; straw center. | Belle of York. Flesh color. |
| Amabilis Grandiflora. White, fringed petals. | Bernard Palissy. Flesh white. |
| Ambroise Verschaffelt. Purplish rose. | Bertha. Brilliant crimson; late. |
| Andre Lauries. Late, deep red. | Bicolor. Guard petals white with cream center, blotched crimson. |
| Argus. Light soft pink. | Brennus. Crimson. |
| Arsene Meuret. Deep pink with yellow stamens. | Bridesmaid. White, semi-double, fragrant. |
| Artemise. Rose, slightly flesh color. | Bucchi. White; yellow center. |
| | Canarie. White, yellow center. |

- Cardinal Richelleu.** Solid red.
Carnation. Bright crimson.
Carnea Elegans. Salmon rose.
Caroline Mather. Dark crimson.
Charlemagne. Flesh white; lilac center.
Charles Binder. Violetred; fragrant.
Charles Grosellin. Salmon yellow.
Charles Verdier. Lilac-rose.
Christine. Soft pink.
Chrysanthemiflora. White and yellow.
Clara Barton. Pure white.
Clarisse. Rosy pink.
Colonel Wilder. Bright rose.
Commodore Dewey. Dark rose.
Compte d'Osmode. Blush white; yellow center.
Compte de Paris. Guard petals pink; yellow center.
Compte de Nantuil. Blush white; center tinged yellow.
Comtesse de Montalivet. Flesh fading to white; fragrant.
Constant Devred. Soft purple; fragrant.
Coralie Matthieu. Turkish red.
Coronation. Delicate flesh tint with pink edges.
Cornucopia. Delicate shade of pink.
Couronne de Roses. Dark rose.
Crimson Queen. Solid intense crimson.
Cytheree. Cream white.
Daniel D'Albert. Deep rose, shaded purple.
Daubenton. Purplish lilac-rose.
Dean Hole. Salmon rose, fragrant.
Decaisne. Purple violet, fragrant.
De Candolle. Currant red, tinged amaranth.
Defiance. Brilliant crimson.
Delachii. Purplish crimson, shaded violet.
Delicatissima. Fine delicate rose.
Dr. Lindley. Dark crimson.
Duchesse d'Amaule. Light rose; center straw color.
Duchess of Orleans. Pale rose with salmon center.
Duchesse de Theba. Flesh white.
Duke of Devonshire. Satiny crimson.
Duke of Wellington. Ivory white; cream center.
Eclatante. Dark crimson.
Edulis or fragrans. Violet rose, fragrant.
Ella Adams. Light crimson.
Emperor of Russia. Deep crimson.
Esther. Guard petals deep rose; center white, rose tinged.
Etta. Bright satiny rose.
Eugene Verdier. Blush pink, fragrant.
Excelsior. Dark crimson.
Faubert. Bright purplish red.
Faust. Rosy white.
Felix Crousse. Brilliant red.
Festiva Maxima. The finest white. Generally considered unsurpassed. Center petals occasionally tinged with carmine; fragrant.
Formosa. Pink and Chamois.
Fulgida. Crimson.
Gen. Bertrand. Rosy violet; salmon center.
General Cavignac. Rose pink, very fragrant.
General Jacqueminot. Color like the Jack rose. Large, fragrant.
General Lawton. Bright rose pink, edged with white.
Geraldine. Pink with yellow center, fragrant.
Gigantea. Pink. One of the largest, fragrant.
Globosa. White, full, fragrant.
Glori de Doual. Deep crimson, semi-double.
Glory of Somerset. Soft pink, fragrant.
Golden Harvest. Blush white with golden center, fragrant.
Grandiflora Alba. Pink guard petals, sulphur center.
Grandiflora Carnea Plena. Outside delicate blush; center yellowish, fragrant.
Grandiflora Superba. Red with rosy white.
Grandiflora Nivea. Flesh color shading to white.
Grandiflora Rosea. Outer and center petals red.
Grandiflora rubra. Large, blood red.
Grandeur. Lilac rose, fragrant.
Halseus. French white, flushed with pink.
Hector. Blush white, shaded to shell pink.
Henri Demay. Light crimson.
Henri Laurent. Rosy pink, fragrant.
Hesperides. White, with flesh guard petals.
Humei. Large, purplish rose.
Humei Alba. Guard petals light pink; center light flesh color, fragrant.
Humei Carnea. Rose pink, large.
Illion. White guard petals, with narrow white center petals.
Insignis. Carmine rose, fragrant.
Irma. Soft rose, flesh tinted.

- James Kelway.** White, very fragrant.
- Jeanne d'Arc.** Outside rose colored, inside straw colored with crimson spots.
- Jennie Lind.** Clear rose pink, fragrant.
- Joan Seaton.** Bright, cherry rose petals, edged with lighter color.
- Josephine Parmentier.** Deep pink.
- Jugurtha.** Dwarf, bright pink.
- Jules Lebon.** Bright carmine red.
- Juno.** Fiery crimson.
- Jupiter.** Large, crimson, tipped light.
- Kelway's Queen.** Delicate light pink, very fragrant.
- Kitty Green.** Rosy-lavender, fragrant.
- La Coquette.** Center and guard petals pink, balance salmon.
- Lady Alexander Duff.** French white; very large, fragrant.
- Lady Beresford.** Soft blush shade petals tipped in carmine.
- Lady Bramwell.** Silvery rose.
- Lady Curzon.** White guard petal, with cream colored inner petals.
- Lætetiana.** Salmon rose.
- La France.** Outside petals pink; yellow center.
- La Martine.** Bright red.
- La Tulipe.** Blush white streaked with carmine.
- L'Esperance.** Sweet-scented rose.
- Lilacina Plenissima.** Delicate lilac rose.
- Limosel.** Bright, clear lilac rose.
- Louis Van Houtte.** Velvety purple, very dark.
- Lucretia.** Light blush.
- Lutea Variegata.** Rose, with creamy center.
- Lyde.** Rose color, with pink center.
- Madam Bollet.** Flesh rose with white reflex.
- Madam Breon.** Rose with whitish yellow.
- Madam Calot.** Buff, with rose center.
- Madam Chaumy.** Satiny rose; flesh center.
- Madam Crousse.** Pure white center, occasionally marked with carmine.
- Madam de Muysart.** Bright rose.
- Madam Ducel.** Salmon rose, striped with silvery white.
- Madam Geissler.** Silvery rose, shaded with crimson.
- Madam Pelissier.** Outside petals pink; light rose center.
- Madam Victor Verdier.** Crimson rose with light violet.
- Madam Vilmorin.** Outside blush; center flaked with crimson.
- Madonna.** Outer petals rose, center creamy chamois.
- Magnifica.** Delicate pink.
- Magnificent.** Pink, cream and gold, splashed with carmine.
- Marguerite Gerard.** Creamy white, occasionally spotted with carmine.
- Marie.** White, rose tinted.
- Marie Houillon.** Satiny rose.
- Maria Kelway.** Blush guard petals, yellow petaloids, with blush tufts.
- Marie Lemoine.** Sulphur white; center petals lightly edged with pink.
- Marie Stuart.** Bright, clear pink petals; center sulphur white.
- Mars.** Purplish crimson.
- Maud S.** Fine, light crimson flower.
- Maud Wild.** Rosy pink.
- Maxima.** White.
- Miranda.** Deep rose.
- Model de Perfection.** Clear pink, fragrant.
- Modeste.** Deep rose, bright, showy, fragrant.
- Modista Guerin.** Dark rose fragrant.
- Moonbeam.** White, tufted in the center.
- Monsieur Bellart.** Purplish crimson.
- Monsieur Boucharlat.** Bright, rosy lilac.
- Monsieur Deschamps.** Light purple.
- Monsieur Jules Elie.** Glossy pink, deepening at the base of the petals.
- Monsieur Paillet.** Light pink, shading to white.
- Monsieur Rousselon.** Rose, with light center.
- Mme. Camille Bancel.** Blush lilac pink with salmon shaded center.
- Mme. Carpentier.** Salmon rose.
- Mme. Coste.** Creamy white; center petals tipped with carmine.
- Mme. Schmidt.** Rosy, lightly tinted white.
- Mrs. Frederic Davidson.** Pale pink guard petals, rest of flower creamy white.
- Mrs. Rudd.** Outside petals white, inside straw color.
- Ne Plus Ultra.** Peach colored, edged with white.
- Nigra.** Darkest crimson.
- Nivalis.** Pure white.
- Noblissima.** Rosy lilac.
- Nymph.** White, dotted with crimson.
- Paul Verdier.** Dark rosy carmine.
- Perfection.** Soft pink with light center.
- Plutarch.** Satin crimson.

Pomponia. Rosy pink; salmon center.
Pottsi. Rosy red.
Prince de Talindyke. Dark purple.
Prince Galitzen. Flesh.
Princess Beatrice. Pink guard petals, inner petals yellow and pink.
Princess Ellen. Delicate flesh.
Princess Mathilde. Rose, slightly violet.
Psyche. Bright rose; creamy center.
Pulcherima Odorata. Shaded pink with yellow center, fragrant.
Pulcherima. Satiny rose; center bluish white.
Purpurea Superba. Large, purplish crimson.
Queen Victoria. Outside bluish, white flesh center.
Rosea Elegans. Bright rose.
Rosea Superba. Rosy pink.
Rose Quintal. Carmine rose.
Rubra Triumphans. Rich purplish crimson.
Sainfoin. Brilliant self rose.
Sapho. Deep rose, with lighter center.
Saturnalia. Lilac rose.

Snowy Coles. Blush white, fragrant.
Solfaterre. White with yellowish tinge.
Souvenir de L'Exposition. Deep rose.
Splendida. Light lilac, edged white.
Stanley. Rosy lilac, with crimson stripes.
Sulphuria. White and deep yellow.
Sunbeam. Radiant silver, fragrant.
The Amazon. Rose colored.
The Bride. White.
Tricolor plena. Rose, flesh and white.
Triomphe de Grand. Creamy white; yellow center.
Triomphe de L'Exposition de Lille. Delicate rose.
Triomphe de Nord. Lilac rose, shaded with lilac.
Verschaffeltii. Deep red.
Victorie Modeste. Silvery rose, with white center.
Violaceæ Grandiflora. Violetpurple.
Virgo Marie. Pure white.
Whiteley. Blush white, with cream center.
Zenobia. Rosy crimson.
Zoe Callot. Pale pink.

PAEONIA CHINENSIS, Chinese Pæony, Single Varieties

Abrupolis. Pink.
Bridesmaid. White.
Captain Holforn. Clear rose.
Comus. Light purple.
Countess Cadogan. Flesh color.
Countess of Warwick. Delicate, soft flesh.
Doris. Bright rose.
Duchess of Sutherland. Flesh pink.
Earl of Morley. Light purple.
Earl of Onslow. Purple.
Earl of Powis. Cherry rose.
Eclat. Purple.
Flag of Truce. Pure white.
Flag of War. Blood-crimson.
Ideality. Deep rose.
Josephine. Rose.
Kimberly. Rose pink.
Lady Helen Vincent. White, tinged flesh.
Lady Jeune. Blush white.

Larissa. Pink.
Lucrinus. Crimson.
Mardonius. Crimson.
Medon. Blush.
Meteor. Dazzling crimson.
Millais. Maroon.
Modesty. Blush pink.
Mrs. F. J. Clark. White.
Mrs. Richmond. Rose color.
Mrs. Vernon Harcourt. Flesh color.
Purity. Pure white.
Quintilius. White.
Scotia. Deep rose.
Sir Angus Holden. Cherry.
Sir Comer Petheram. Crimson.
Sir Edward Lawson. Pure rose.
Sir Robert Gresly. Rich maroon.
Snowflake. Snow white.
Stanley. Maroon crimson.
Victoria. Bright rose.

PAEONIA CHINENSIS, Chinese Pæony. Japanese Single Varieties.

These single flowering varieties, with their large flowers, often six to seven inches across, are very showy. They form a distinct sub-group in this family.

Apollo. Deep pink.
Diana. Blush, with cream center.
Exquisite. White.
Fabiola. Delicate blush.
Neptune. Shell pink.
Ophir. Dark carmine.

Saturn. Rosy pink.
Souvenir. Flesh pink.
Titian. Delicate pink.
Topaz. Deep rose.
Undine. Bright pink, darker shading.
Vesta. Purplish red.

OTHER PEONIES

P. albiflora. The old double white variety best known in the gardens of the last century. Introduced from Siberia about 1548.

P. officinalis. This also is an old garden favorite, having been introduced into English gardens from Switzerland same time as the above. It is a very early, double sort, with excellent dark green foliage and showy flowers. Of late years they are coming into greater demand on account of their early blooming.

var. **rosea plena.** Double; beautiful clear pink.

var. **rubra plena.** Double; brilliant deep crimson.

P. tenuifolia. (FERN-LEAVED PEONY.) Large, single, rich crimson flowers. A dwarf grower, attaining a height of from 12 to 18 inches. The fern-like foliage makes it a very desirable plant outside of the flowers. This is the earliest Peony to bloom.

var. **flore pleno.** A double flowered variety of the above.

PAPAVER—Poppy

Papaveraceæ

These perennial varieties should not be confused with the annual poppies which are grown from seed. They are among our most showy border plants and no garden work can well be arranged without their use.

P. nudicaule. (ICELAND POPPY.) 1 ft. June-October. Native of Siberia and parts of North America. Colors from pure white and yellow to deepest orange scarlet. The most profuse bloomer of this class. The flowers are borne on slender stalks well above the foliage and they are fine for cutting purposes.

P. orientale. (ORIENTAL POPPY.) 2 ft. June. One of the showiest of all perennial plants. Introduced from Armenia in 1714. It has large thistle-like leaves about a foot long, clothed with white bristly hairs. Its deep orange scarlet flowers have a dark purple spot at the base of each petal. They are of exceptional size, frequently measuring six inches across.

var. **bracteatum.** A blood red variety with heavy black bar at base of petal. Very large and distinct.

PARDANTHUS—Blackberry Lily

Iridaceæ

P. Chinensis or **Sinensis.** 4 ft. June-September. China. Showy orange red flowers, spotted with purplish brown. They are followed by showy bunches of shiny black seeds resembling blackberries. Prefers a rich sandy loam and sunny locations.

PENTSTEMON—Beard Tongue

Scrophularaceæ

A very excellent group of plants for the border and rockery or for mass planting. They are easily cultivated in ordinary garden soil. They are persistent bloomers and the flowers of nearly all the varieties are useful for cutting purposes.

P. barbatus var. **Torreyi.** (TORREY'S BEARD TONGUE.) 3 ft. July-August. Texas. Very long spikes of showy crimson flowers.

P. diffusis. 18 in. August. Colorado. Showy spikes of purple flowers.

P. lævigatus var. **digitalis.** 2 to 3 ft. July-August. Pennsylvania. Purple white flowers in spikes.

P. ovatus. 2 to 3 ft. July-August. Blue changing to purple.

PHLOX—Hardy Perennial Varieties

Polemoniaceae

The name comes from the Greek word *Phlox* meaning a flame, in reference to the brilliancy of the flowers. This extensive and interesting genus is exclusively North American and contains many of our most valuable and hardy perennials. The varieties here listed should not be confused with the annual *Phloxes* which are grown from seed. Probable no genus of plants in its many forms serves more to ornament the lawns of America than this. Among the different varieties is found all the shades of coloring and a succession of bloom thruout the season. What are commonly termed perennial *Phloxes* are seedlings, variations from *P. paniculata* which is common to many of the central states. Of this species there are several varieties, all of the same general character, producing large terminal clusters of white, purple, pink and crimson flowers. From this species and from *P. maculata*, a lower growing species common in the middle and western states, have originated the many rare and beautiful hybrids that are now attracting such universal attention. Strange to say, however, this hybridizing work has been done mainly by European florists. It is interesting to note also that the annual or Drummond *Phlox* is a native of Texas and was first discovered and introduced into Scotland in 1835 by Mr. Drummond, a botanical collector sent out by the Glasgow Botanical Society.

P. amoena. (LOVELY PHLOX.) 6 in. May-June. Virginia. Bright pink flowers in dense heads on wiry stems.

P. Carolina. 1 ft. July-September. America. Forms a dense, well branched bush, covered with showy heads of bright pink flowers.

P. divaricata or **Canadensis.** 12 to 18 in. April-May. America. Lilac blue flowers. A very attractive border plant. Prefers a rich soil.

P. ovata. 9 in. June-August. America. Broad, light green foliage, with showy heads of clear pink flowers.

P. procumbens. 4 in. May-June. America. A fine rock plant. Shiny, narrow foliage, with lilac colored flowers.

P. reptans. (CREEPING PHLOX.) 3 in. June-July. America. Small showy clusters, with pale lilac colored flowers.

P. subulata. (GROUND OR MOSS PINK.) 4 in. May. Rose colored flowers. As a cover plant and for rockery work, we know of nothing that excels this. The foliage, handsome and moss-like, makes a close carpet of green and when in flower the plants form a sheet of color.

HYBRID PHLOX (*P. paniculata* and *P. maculata*)

These hybrid varieties range in height from two to four feet. Their blooming season covers the entire period from June to October, and a well arranged assortment of them will keep the border or garden aflame thruout the season. With these varieties the flowers are borne in large, showy heads and in nearly every case on good stiff stems for cutting. They are therefore particularly desirable for this purpose.

Adelaide. Brilliant carmine.

Agnes McLeod. Light rosy purple.

Albatre. Pure white, dwarf.

Amazon. Large, pure white.

Aquilon. Deep pink, crimson eye.

Argon. Delicate rose, shaded salmon.

Astier Rehu. Light purplish crimson.

Athis. Deep salmon pink, crimson eye.

Attraction. Clear purple; dark center.

B. Comte. Rich purplish crimson.

Baccanthe. Dark crimson, shading to a lighter center.

Belvidere. Salmon pink.

Beranger. White suffused pink, crimson eye.

Blanc Nain. Dwarf, pure white.

Boquet de Fleuss. White; pink center.

Boule de Feu. Bright salmon, crimson eye.

Brantome. Grosiellered; violet center.

Brazer. White, suffused pink, crimson eye.

Bridesmaid. Pure white, with crimson eye.

Candeur. Pure white dwarf.

Caran de Ache. Rosy carmine, tinged with rose.

Champs Elysee. Purplish crimson.

Coccinea. Scarlet vermillion.

Concours. Rosy carmine, fire colored eye.

- Conquelizot.** Orange scarlet, carmine eye.
- Crepuscle.** White shaded violet, crimson eye.
- Cross of Honor.** Magenta, bordered white in a form of a Maltese cross.
- Cyclon.** Rosy lilac, dark rose eye.
- Czarina.** Pure white.
- Derviche.** Dark lilac, purplish violet center.
- Dora Umgella.** White, with lilac pink center.
- Eclairer.** Carmine, salmon center.
- Erckman-Chatrien.** Amaranth purple with white eye.
- Esias Tegner.** Deep rose.
- Esperance.** Lavender pink; white center.
- Etna.** Salmonscarlet, with crimson eye.
- Eugene Danzenvilleir.** Lilac, with white edge and center.
- Fantome.** Pure white, surrounded by clear violet.
- Faust.** Bright pink; carmine center.
- Franklin.** Dark purple.
- Geo. Chanzy.** Scarlet pink, tinted salmon.
- Girondin.** Dark carmine; blush center.
- Henri Murgher.** Pure white, with carmine center.
- Independence.** Large, pure white.
- Iris.** Dark purple violet.
- J. A. Slocum.** Vivid crimson, with dark eye.
- James Galloway.** Cherry red.
- Jeanne d'Arc.** White, late.
- Jocelyn.** Salmon red; dwarf.
- Jules Finger.** Pure white.
- La Feu de Monde.** Bright salmon red; late.
- La Flander.** Dark red; very late.
- Lanibore.** Bright rose.
- La Nuit.** Amaranth, purplish eye.
- La Pole du Nord.** Pure white; crimson center.
- La Soliel.** Brilliant china rose.
- La Vague.** Silvery rose.
- Le Siecle.** Salmon dwarf rose.
- Le Venguer.** Bright carmine amaranth.
- Lord Raleigh.** Dark violet, shading to purple center.
- Lothair.** Cerise salmon; crimson eye.
- Matador.** Bright orange scarlet; cherry red eye.
- Madagascar.** Delicate rose, with deeper eye and white halo.
- Madam Meuret.** Flame color, carmine center.
- Madam P. Langier.** Salmon pink; dark eye.
- Madam Pape Carpentier.** Pure white; early, dwarf.
- Madam Riviere.** Bright terracotta.
- Michael Buchner.** Dark purple.
- Michael Cervantes.** Pure white, with red center.
- Minerva.** Delicate pink.
- Miss Lingard.** Pure white; lavender eye. Early.
- Mme. Marie Kuppenheim.** Pure white dwarf.
- Moliere.** Salmon rose, with deeper eye.
- Montagnard.** Dark red, purple eye.
- Nautilus.** Soft salmon, scarlet eyed. Dwarf.
- Norwood.** Bright magenta crimson.
- Oberon.** Coppery red.
- Ornament.** Rose magenta; crimson eyed.
- Otto Thackler.** Magenta crimson.
- Pantheon.** Deep salmon rose.
- P. Bonnetain.** Bright pink; light center.
- Peach Blow.** Delicate pink; deep rose center.
- Pink Beauty.** Light pink.
- Pluto.** Deep fuschia red.
- Professor Schlieman.** Bright lilac rose; carmine eye.
- Purity.** Large, snow white.
- Queen.** Pure white.
- R. B. Struthers.** Bright pink salmon.
- Richard Wallace.** Pure white; violet rose center.
- Saison Lierval.** White with light pink center.
- Skeleton.** White, with red eye.
- Semisamis.** Crimson purple; large white center.
- Simplon.** Salmon pink; dark center. Large.
- Suffrage.** Lilac mauve; rose center.
- Sunshine.** Deep salmon pink, rose center.
- Sylphide.** Large pure white flowers.
- Thebaide.** Salmon red; crimson center. Dwarf.
- The Pearle.** Pure white.
- Toreador.** Salmon rose. Dwarf.
- Venus.** Silvery; white lilac eyed. Dwarf.
- Wartz.** Pink.
- William Muhle.** Bright rose and white; carmine eyed.
- William Robinson.** Pale salmon; rose center.

PHYSOSTEGIA—False Dragon Head

Labiatae

P. Virginica. 3 to 4 ft. August-September. America. One of our most beautiful midsummer flowering perennials, forming dense, well-shaped bushes, bearing spikes of delicate tubular flowers not unlike a gigantic heather. A most useful variety for cutting. Bright pink.

var. **alba.** A pure white form.

PLATYCODON—Chinese Bellflower

Campanulaceae

A veritable giant Hairbell, forming a dense, branched bush of upright habit with attractive foliage and from July until September bearing a constant succession of conspicuous, bell-shaped flowers varying in color from pure white to deepest blue. Has also been called "balloon flower." The peculiar formation of the bud, the edges of the petals being tightly joined until fully opened, gives it an inflated appearance.

P. grandiflora. 2 ft. July-September. Dahuria. Showy deep blue flowers.

var. **alba.** Ivory white flowers.

P. Mariesii. 1 ft. July-September. China. A dwarf species and very distinct. Broader and thicker foliage and somewhat larger flower than *P. Grandiflora*. Deep violet blue.

PLUMBAGO—Leadwort

Plumbaginaceae

P. Larpentæ. (LADY LARPENT'S LEADWORT.) 9 in. August-October. China. A low growing plant forming a neat mass of foliage and in autumn completely enveloped with a wealth of deep blue flowers and continues to bloom until cut down by frosts. For bedding purposes this plant is valuable and it is equally well adapted for the front of the border as an edging plant and for the rockery.

POLEMONIUM—Jacob's Ladder

Polemoniaceae

P. cæruleum. (CHARITY.) 18 to 24 in. May-July. Deeply cut, dark green foliage and showy clusters of deep blue flowers. Thrives in ordinary garden soil and well adapted for border or rockery.

var. **album.** A pure white flowered form.

P. humile. [*Richardsonii.*] (DWARF JACOB'S LADDER.) 6 in. July-August. Rocky Mountains. A late flowering species with cut foliage which gives off a faint musk odor. Blue flowers in drooping panicles.

POLYGONATUM—Solomon's Seal

Liliaceae

P. multiflorum. 2 to 3 ft. May-June. America. Handsome herbaceous plants of easy culture and graceful habit. Long arching, leafy stems with creamy white, tubular flowers drooping from the clusters of the leaves. Does especially well in shady nooks and corners of the rockery.

POLYGONUM—Knotweed

Polygonaceae

The species here listed are vigorous growing plants which are successful in all common garden soils. They have very handsome foliage and flowers and the taller growing species are admirable for specimen lawn planting. They are especially desirable for clothing waste spots and unsightly corners.

P. amplexicaule. [*Multiflorum.*] (MOUNTAIN FLEECE.) 3 ft. July-September. Himalayan Mountains. Handsome, oval foliage, and large showy clusters of creamy white flowers.

P. cuspidatum. (GIANT KNOTWEED.) 5 ft. August-September. Japan. Long arching stems, forming a very ornamental clump of handsome, heart-shaped leaves. Long, drooping clusters of pure white flowers.

P. Sachalinense. (SACHALIN KNOTWEED.) 10 ft. July-September. Sachalin Islands. Long, heart-shaped foliage, with showy clusters of creamy white flowers. A gigantic form and handsome as a specimen plant.

POTENTILLA—Cinquefoil, Five Finger

Rosaceae

This is a large genus of very desirable herbaceous plants and it is somewhat remarkable that, with their ornamental character and with the large number of varieties under cultivation, so few of them are met with in modern gardening. They are of bushy habit and give very brilliant color effect. Besides the species here quoted there are a number of hybrid varieties, propagated by specialists, which are of great merit where they are successfully grown.

P. formosa. (SHOWY CINQUEFOIL) 2 ft. June-August. Nepaul. Large, branched heads of showy, deep red flowers.

P. grandiflora. 12 in. June-July. Siberia. Handsome foliage and broad heads of red and orange flowers which are borne well above the foliage.

P. insignis. [*argyrophylla.*] 18 in. June-July. Nepaul. Silvery foliage; bright yellow flowers.

PRIMULA—Primrose

Primulaceae

The generic name for this class of plants comes from the Latin word *Primus*, meaning "the first" and alluding to the early flowering of the plant. While the name Primrose has been most generally applied to the well known *P. vulgaris*, (SYN. *P. acaulis*), the English Primrose, it still belongs to a number of other desirable varieties and species differing considerable in form and color. Many of them are only semi-hardy and require more or less winter protection. Several species are particularly valuable as florists plants and for window garden. All varieties of these thrive particularly well in well drained soil, preferring partly shady positions.

P. cortusoides var. **Sieboldii.** 9 in. May-June. Japan. Under this head are classed a number of hybrid Primroses of great merit and popularity. They bloom in the late spring, producing broad umbels of showy flowers, varying from pure white to richest crimson. Very effective at the front edge of the border massed with other *Primulas*, or for rock work.

P. Japonica. 18 in. May-July. Japan. A vigorous growing plant, preferring rather shady locations and a good deep loam. Forms a broad, well shaped plant with flowers arranged in whorls, varying from deep red to pure white.

P. officinalis. [SYN. *P. veris.*] (POLYANTHUS OR COWSLIP.) 9 in. May-June. England. Showy, branched heads of beautiful crimson flowers with clear yellow eyes and a charming tho faint fragrance. Each cluster is on a good stem, making them desirable for cutting purposes.

var. **hybrida.** These vary in color, ranging from crimson and deep yellow to white.

PULMONARIA—Lungwort

Boraginaceae

P. saccharata. [*officinalis.*] (BETHLEHEM SAGE.) 1 ft. May-July. England. This is the best known species of a large genus of herbaceous plants which are common in temperate regions of both hemispheres. This species has handsome foliage, dark green, spotted with gray. Pink flowers tinged with blue with terminal spikes.

PYRETHRUM—Feverfew

Compositae

Of all hardy plants that are suitable for cutting purposes, none are more beautiful than the Pyrethrum. They thrive in almost any good soil, preferring a well drained loam. In point of numbers, the most important class of Pyrethrum is the Caucasian Pyrethrum known botanically as *P. roseum*. This has yielded a large number of varieties.

P. roseum. 12 to 18 in. June-September. Caucasus. These showy plants produce flowers in a large variety of shades, the hybridizing having resulted in colors ranging from white, white with yellow center, yellow and lilac to rose, carmine and crimson. They are extremely desirable for cut flowers, easy to grow, and if cut down after flowering in June, they will bloom freely again in September. This species is also important as being the basis of the Persian Insect Powder, the best grade of which is imported from Caucasus, and is manufactured from the dry flowers only.

P. Tchihatchewii. (TURFING DAISY.) 9 in. June-August. Siberia. Of dwarf, creeping habit. This species forms a dense turf of dark green, finely-cut foliage with a wealth of showy, pure white flowers, with yellow centers, borne in succession in midsummer. Chiefly remarkable for its power of sustaining drouth, its foliage retaining its verdure even in dry weather. It is therefore very useful in covering dry waste banks or slopes.

P. uliginosum. (GREAT OX-EYE OR GIANT DAISY.) 4 to 5 ft. August-October. Russia. One of the noblest of all tall-growing herbaceous plants, forming dense bushes four or five feet in height, terminated by loose clusters of pure white flowers with bright yellow centers. The individual flowers are often four or five inches across, and each is borne on a good, stiff stem for cutting.

RANUNCULUS—Buttercup

Ranunculaceae

Several varieties of this genus have, in the Eastern States, become pernicious weeds and native Buttercup is in bad repute among many Eastern farmers. Still, a number of varieties are very desirable in landscape work to naturalize in situations where other things will not succeed.

R. acris var. flore plena. (BACHELOR'S BUTTON.) 2 ft. May-July. England. Showy, very double, deep glossy, golden yellow flowers and handsomely cut foliage.

R. aconitifolius. (FAIR MAIDS OF FRANCE, FAIR MAIDS OF KENT.) 2 ft. June. Very similar to above, with fine, double, white flowers.

R. repens var. flore plena. 1 ft. May-July. America. A free growing creeper with pretty, double, yellow flowers. Valuable for naturalizing in wet, shady spots where its weedy growth will not be a fault.

RHEXIA—Meadow Beauty

Melastomaceae

R. Virginica. (DEER GRASS.) 9 in. July-September. These pretty herbaceous perennials are common in sandy swamps from New York westward. The flowers are bright pink, large and showy. In many cases they are very effective border plants. By their branching habit they completely cover the ground with foliage and flowers.

RUDBECKIA—Cone Flower

Compositae

Named in honor of Prof. Rudbeck, predecessor of Linnæus at Opsahl. A class of well known border plants thriving in ordinary soil and forming a handsome bush with striking flowers that are suitable for cutting purposes. Of this class *R. laciniata* is probably the best known, as it was widely advertised and disseminated several years ago. Some of the other varieties are natives

of western meadows. A number of species were introduced into Europe where they attained considerable reputation as ornamental plants.

R. fuigida. 6 ft. August-September. This variety makes a compact and bushy plant. The flowers are orange yellow with maroon disk.

R. laciniata. (GOLDEN GLOW.) 6 ft. July-September. Very large, double, dahlia-like flowers of a brilliant, golden yellow color. These are borne in great masses surmounting the bush and making it an extremely showy plant.

R. purpurea. (GIANT PURPLE CONE FLOWER.) 4 ft. June-October. An entirely distinct variety of medium growth. Bears very large, reddish purple flowers on good stems.

R. speciosa. [*Newmanii.*] 3 ft. September-October. Dark orange yellow flowers with deep purple, cone-like centers. Each flower on a stiff, wiry stem, admirably fitting it for cutting purposes.

R. sub-tomentosa. 5 ft. August-September. A pyramidal, densely branched plant. In early fall it is completely enveloped with bright, lemon yellow flowers on good stems.

SALVIA—Sage

Labiatae

S. azurea grandiflora. [*Pitcherii*] (MEADOW SAGE) 4 to 5 ft. July-August. This variety is said to come from Texas. A strong growing plant, giving satisfaction in medium rich loam. The flowers which are of a deep sky blue shade are borne in great profusion thru the blooming season.

SANTOLINA—Lavender Cotton

Compositae

S. Chamæcyparissus var. *incana.* 1 ft. July. This plant forms a broad densely branched bush with intensely silvery foliage. It is very effective for either border or rockery. Its flowers are deep yellow, small, of button-like form. Effective where used in contrast with plants of darker foliage.

SAPONARIA—Soapwort

Caryophyllaceae

S. ocymoides. (ROCK SOAPWART.) 6 in. May-August. A broad, prostrate plant with neat foliage which in its blooming season is hidden by a wealth of showy, clear pink flowers. The blooming period is extended by not allowing it to go to seed.

S. officinalis flore plena. (BOUNCING BET.) 2 ft. August. Broad heads of white or double pink flowers. A rampant grower and should be planted where its weedy nature will not be a disadvantage. A good plant for naturalizing.

SAXIFRAGA—Rockfoil, Saxifrage, Megasea

Saxifragaceae

From *saxum*, a stone, and *frango*, to break; referring to its medicinal quality in calculus. In this very extensive genus we have some very beautiful perennial plants admirably suited for rock work or any rough ground where it is difficult to make any other plants grow. This, however, is not true of all the species as some of them require good soil and drainage.

S. cordifolia. (HEART-LEAVED SAXIFRAGE.) 15 in. May-June. Siberia. Handsome, dark green, heart-shaped foliage and dense clusters of deep rosy purple flowers on clean, stiff stems.

S. crassifolia. 15 in. May-June. Siberia. A similar plant to *S. cordifolia* but the leaves have wavy edges. Flowers bright pink in large panicles.

S. ligulata. 1 ft. May-June. Nepal. Long, strap-shaped foliage and dense clusters of pure white flowers.

SCABIOSA—Scabious, Mourning Bride*Compositæ*

S. Caucasica. [*atropurpurea*.] (MOURNING BRIDE.) 18 in. June. Caucasus. An excellent border plant and also useful for cutting purposes. The lilac blue flowers are borne on long stems. They bear a constant succession of showy flowers for a long blooming period.

SEDUM—Stone-Crop*Crassulaceæ*

A very extensive genus of plants, some annual and some perennial, common to almost every country and climate. Most of the species are, from their succulent character and drouth resisting qualities, well adapted for covering rough walls and for rock work. They are also used for dry, sunny banks and some of them are valuable for growing cover carpets.

S. acre. (GOLD MOSS, WALL PEPPER.) 4 in. June-July. England. Handsome, light green, evergreen foliage, with clouds of bright yellow flowers. A good carpet plant.

S. album. 6 in. June-August. England. A choice creeping plant with clear green foliage and white flowers and showy heads.

S. pulchellum. 6 in. July-August. America. A beautiful tufted species with very fine foliage which assumes rich tints of red brown purple. Flowers rosy purple.

S. sexangulare. 6 in. June-July. Yellow flowers.

S. Sieboldii. 6 in. August-October. Japan. One of the handsomest species, with long trailing branches and broad glaucous foliage margined with pink in late autumn. Flowers bright pink.

S. spectabile. (BRILLIANT STONE-CROP.) 1 ft. September-October. Japan. Of erect habit with broad, clean foliage and rose colored flowers in broad showy heads.

SEMPERVIVUM—Houseleek, Hen=and=Chickens*Crassulaceæ*

From *semper vivo*, to live forever; referring to the tenacity of life of the plants. An interesting class of rock plants that will thrive in crevices and are among the most useful of all plants for carpeting barren spots. Their foliage is characteristic and they are exceedingly pretty when in flower.

S. anomalum. June. Mauve-purple flowers; light green, hairy foliage.

S. Heuffeli. July-August. Greece. Rosettes, deeply colored brown on their upper halves.

S. tectorum. (COMMON HOUSE-LEEK.) June-July. Europe. Broad, handsome green rosettes, tinged with purple in autumn.

SENECIO—Groundsel, Ragweed*Compositæ*

S. pulcher. 2 ft. July-October. Uruguay. Introduced into this country in 1872. A pretty cobwebby perennial plant with very large, showy, purplish red flower heads with yellow centers; very rich in effect. The flowers are borne in continuous succession and the plant thrives in ordinary soil.

SIDALCEA—Indian Mallow*Malvaceæ*

S. candida. 4 ft. July-August. Colorado. A vigorous, coarse growing plant producing handsome effects in the border with its showy, tall, narrow spikes of pure white flowers.

SILENE—Catch-Fly

Caryophyllaceæ

Its botanical name is an allusion to the viscid moisture on the stalks of some of the species by which flies are sometimes entrapped. It is a large genus, only a very few of which are of ornamental merit.

S. maritima. (SEASIDE CATCH-FLY.) 6 in. June-October. England. A handsome plant with thickly matted, glossy green foliage and a constant succession of pure white flowers.

S. Pennsylvanica. (PENNSYLVANIA CATCH-FLY.) 1 ft. May-June. America. Showy heads of bright pink flowers.

S. Shafta. (AUTUMN CATCH-FLY.) 6 in. July. Caucasus. A very desirable dwarf plant which trails close to the ground, forming thick masses of foliage. In its blooming season it bears a profusion of crimson red flowers.

SOLIDAGO—Golden Rod

Compositæ

The national flower of the United States. This grand flower comprises quite an extensive genus of herbaceous perennials common thruout North America. It is said that only one species is found in Asia or Europe. In the hardy border they are quite indispensable for certain effects.

S. Canadensis. 3 to 4 ft. September-October. Deep golden yellow flowers. This is probably the best known variety in the West.

S. rigida. 4 to 5 ft. August-October. Broad, oval foliage; of upright habit. Dense heads of bright yellow flowers.

S. sempervirens. 3 ft. August-October. Glossy, deep green foliage with showy panicles of yellow flowers.

SPIRÆA—Meadow Sweet or Goat's Beard

Rosaceæ

The species here described should not be confused with the shrubby Spireas which are listed at length under the chapter on Deciduous Shrubs. The following varieties are all herbaceous plants altho they belong to the same general order as the shrubs. They form a valuable class of all ornamental border plants.

S. Aruncus. (GOAT'S BEARD SPIRÆA.) 4 to 5 ft. June-July. England. An excellent plant for moist and shady places. Handsome light green foliage, surmounted by immense, branched panicles of creamy white flowers.

S. astilboides. 2 ft. June-July. Japan. Of dwarf habit, with handsomely cut, compound foliage and extremely showy, minute branched panicles of pure white flowers.

S. Chinensis. See *Astilbe Chinensis*.

S. filipendula flore plena. (DROPWORT.) June-July. England. In this species the large heads of clear white flowers are carried well above the beautiful, dark green, fern-like foliage.

S. Japonica. See *Astilbe Japonica*.

S. Kamtschatka. [*gigantea*.] 5 to 6 ft. July. Siberia. Broad, deeply lobed foliage and dense panicles of white flowers.

S. lobata. [*venusta*.] (QUEEN OF THE PRAIRIE.) 5 ft. June-July. America. Immense heads of deep carmine rose flowers. One of the longest cultivated varieties of the herbaceous Spireas.

S. palmata. 2 ft. June-July. Japan. Introduced from England in 1822. One of the finest of its class, with beautiful palmate foliage and a succession of showy heads of deep crimson flowers.

var. **elegans.** A rare form of above with pure white flowers, with a touch of crimson on the anthers. A rich and beautiful variety.

S. Ulmaria var. **flore plena.** (DOUBLE MEADOW SWEET.) 3 ft. June-July. England. A handsome, double white variety. It is one of the most beautiful and is excellent for cutting purposes owing to its good stems.

STACHYS—Woundwort*Labiatae*

S. Betonica. [SYN. *Betonica rosea*.] 1 ft. July-August. An excellent plant forming compact clumps with pretty green foliage. Bears rosy pink flowers in small spikes. A good rockery plant.

S. lanata. (WOOLY WOUNDWORT.) 18 in. July-August. Siberia. Broad, densely leaved bush with silvery white foliage. Light purple flowers in clusters. Contrasts well with plants of darker foliage.

STATICE—Sea Lavender, Marsh Rosemary*Plumbaginaceae*

These are useful rockery plants in many sections. They prefer rich, well drained soil. The foliage is deep green and leathery in appearance. The flowers are borne in large branched panicles and carried well above the foliage.

S. Gmelini. 1 ft. July-August. Russia. Rich blue flowers.

S. latifolia. 18 in. June-July. Siberia. Bright blue flowers.

S. Tartarica. [SYN. *Incana*.] 1 ft. June-August. Tartary. Bright, ruby red flowers.

STOKESIA—Stoke's Aster*Compositae*

S. cyanea. (STOKE'S ASTER.) 2 ft. July. The only known species of this genus. One of the very best border and rockery plants, thriving in all soils. The foliage is handsome, forming a dense bush. Thruout its season it is covered with broad, lavender blue flowers, often three to four inches across. As it is a low grower, it is very useful for borders.

THALICTRUM—Meadow Rue*Ranunculaceae*

These plants are particularly desirable on account of their handsome, fern-like foliage, that of *T. adiantifolium* being particularly suggestive. The flowers are showy also and are borne on long stems well above the foliage.

T. adiantifolium. 18 in. May-June. Yellow flowers. The foliage resembles the Maiden Hair Fern.

T. aquilegifolium. (FEATHERED COLUMBINE, COLUMBINE RUE.) 2 ft. May-June. Handsomely cut foliage with showy heads of purple flowers.

THERMOPSIS*Leguminosae*

T. Caroliniana. 4 ft. June-July. A handsome plant producing long spikes of yellow, showy flowers. They have palmy, downy leaves. Resembles somewhat the Lupines.

THYMUS—Thyme*Labiatae*

T. vulgaris. (GARDEN THYME.) 6 in. June-July. Small lilac flowers with aromatic fragrance. A low growing creeper thriving on dry banks. Its name comes from the Greek *thuo*, to perfume; being formerly used for incense in the temples. It is a native of Spain and Italy. The Romans were well acquainted with Thyme which was one of the plants recommended to be grown for the sake of bees. In the south of France an essential oil distilled from it was exported and sold as Majoram oil, for which it is substituted.

TIARELLA—Mitrewort, Foam-flower*Saxifragaceae*

T. cordifolia. (FALSE MITREWORT.) 8 in. May-June. America. A low growing plant with heart-shaped foliage and showy spikes of small white flowers. A good plant for rock work and carpet planting.

TRADESCANTIA—Spiderwort

Commelynaceæ

T. Virginica. 2 ft. June-October. America. This is an interesting and valuable border plant on account of its continual succession of flowers which are freely produced thruout the season. It has long grass-like foliage and the bright purple flowers are borne in terminal clusters on good stems.

var. **alba.** A white form of the above.

TRILLIUM—Wood Lily or Wake Robin

Liliaceæ

T. erectum. 6 to 9 in. April. Flowers maroon.

T. grandiflorum. 6 to 9 in. April. This belongs to a singular and beautiful genus of perennial plants native of North America and Asia. This species is in many places considered one of the best of our spring flowering plants. It is also probably the best known species and popular on account of its large flowers, snow white when first expanding and changing to rosy-pink with age. They succeed best in a moist, shady situation and rich vegetable mould.

TROLLIUS—Globe-Flower

Ranunculaceæ

T. Europeus. (BOITS, EUROPEAN GLOBE-FLOWER OR GOLDEN BELL.) 2 ft. May-August. This plant has handsome, dark green, finely cut foliage and brilliant yellow flowers resembling immense Buttercups. They are carried well above the foliage. The constant succession of bloom thruout the summer makes them valuable in many ways. They have good stems for cutting.

TRITOMA—Red Hot Poker, Torch Lily, Flame Flower

Liliaceæ

This genus is a native of the south of Africa. They were first introduced in 1707. Many botanists class them under the generic name of *Kniphofia*, but the best known classification among cultivators is *Tritoma*. The *Tritomas* have, during the past few years, become quite important for border and bedding purposes, being especially desirable for their brilliant effects when put in massed groups.

T. coralina. 2 ft. August-October. A dwarf variety rarely exceeding two feet in height. Produces freely medium-sized spikes of coral red flowers shading to yellow.

T. nobilis. 4 ft. August-October. A striking and noble variety, with tall spikes of bright scarlet flowers shaded with orange.

T. obelisque. 3 to 4 ft. August-September. A distinct variety with chrome yellow flowers.

T. Otto Mann. 3 to 4 ft. August-October. A strong growing variety. The flowers, when first opening, are a brilliant, fiery red changing, as they mature, to a pure yellow, making a fine contrast between the lower and upper flower heads.

T. Pfitzerii. (THE EVERBLOOMING FLAME FLOWER.) 3 ft. August-October. The oldest and best known variety. Perhaps the freest flowering variety in cultivation. Rich, orange scarlet, shaded with salmon. The heads that bloom are often over twelve inches long.

T. uvaria grandiflora. 3 to 4 ft. August-October. This is probably the parent variety of the various *Tritomas* under cultivation. The flowers are rich crimson shading to yellow. They are borne in heads on long spikes. Well adapted for use either as single plant or among shrubbery.

TUNICA

Caryophyllaceæ

T. saxifragica. (ROCK TUNIC.) 6 in. June-October. A neat tufted plant with dark green foliage, handsomely studded with pretty, light pink flowers in constant succession from midsummer until hard frosts. Well adapted for either border or rock work.

VALERIANA—Valerian

Valerianaceæ

V. officinalis. (ST. GEORGE'S HERB. CAT VALERIAN.) 4 ft. June-July. Said by some to be named after Valerius who first used it as a medicine. These are tall growing plants with compound foliage and very large with showy panicles of light lavender flowers with the fragrance of mignonette.

V. Phu var. **aurea.** A golden leaved variety and highly effective as a border plant, particularly in spring when its foliage is newly developed.

VERNONIA—Iron Weed

Compositæ

V. Arkansana. 5 ft. September. Named in honor of William Vernon, a botanical traveler in North America. This particular species is a native of the middle West, generally considered the best of its class. It is a very vigorous growing plant as shown by its height. It is suited to all soils and is an excellent plant for the back of borders or for naturalizing. Single, well grown specimens among the trees for shrubbery are effective. Intense purple flowers in showy heads.

VERONICA—Speedwell

Scrophulariaceæ

An extensive genus of ornamental plants adapted to a variety of uses. Their stature varies from creeping plants to two or three feet in height. The prevailing color is blue, tho shades of red, white, pink and purple are found among them. These plants delight in a mixture of leaf mould and loam, with plenty of root room.

V. amethystina. (AMETHYST SPEEDWELL.) 1 ft. May-June. A thickly branched plant with deep green foliage and showy spikes of amethyst blue flowers.

V. gentianoides. (GENTIAN SPEEDWELL.) 10 in. June-July. Tufted glossy green foliage and spikes of light blue flowers.

V. incana. (HOARY SPEEDWELL.) 1 ft. July-September. Bright, silvery foliage with spikes of rich blue flowers.

V. longifolia, var. **subsessilis.** 2 ft. August-October. Japan. The best of the large growing species. Forms showy clumps with good foliage and produces a constant succession of bloom thruout the season. Bright blue.

V. ruprestis. (ROCK SPEEDWELL.) 8 in. May-June. Similar to *V. cerceoides* that flowers later. Forms a thick, dense covering of deep green foliage and when in bloom is literally covered with light blue flowers.

V. spicata. 2 ft. June-September. Long spikes of bright blue flowers. They continue in flower for several weeks and are of very striking appearance when in bloom.

V. Virginica. (CULVER'S ROOT.) 4 ft. August-September. Immense spikes of pure white flowers. The spikes are often 18 inches long and branched. Effective for the back of a border.

VINCA—Periwinkle

Apocynaceæ

For covering bare spaces under trees and as a cover plant in the rockery this is not surpassed by any perennial. It is a close, dense, rapid grower. Long, trailing shoots rooting at intervals and forming a dense dark green carpet, which is lighted up by the showy flowers borne in profusion in the spring and occasionally thruout the summer.

V. minor. 6 in. May. Bright blue.

var. **alba.** Pure white form.

VINCETOXICUM—Cruel Plant

Asclepiadaceæ

V. Japonicum. (*acuminatum.*) 2 ft. June-August. A rare Japanese plant forming an upright bush with terminal heads of pure white flowers. It derives its name from the peculiar viscid substance at the base of each flower which serves to hold such insects as attempt to suck the nectar of the flower and from which they cannot escape.

VIOLA—Violet, Pansy, Heartsease

Violaceæ

This genus consists of more than 150 species. Indigenous in North America, Europe, China and Japan. They are of varying degrees of hardiness: But under ordinary conditions most of them are extremely desirable. The Pansy is the most important species of this class owing to its wide popularity and great variety of coloring.

V. cornuta. (HORNED VIOLET.) 10 in. May-June. Switzerland. A broad dense matted plant with clouds of showy purple flowers.

var. **alba.** A pure white form of the above.

V. odorata. (RUSSIAN VIOLET.) 6 in. May-June. Russia. Deep intense blue flowers of a pleasing and lasting color. Fragrant.

var. **flore pleno.** (DOUBLE RUSSIAN VIOLET.) A double form of the above and equally as fragrant.

V. pedata. (BIRD FOOT VIOLET.) 6 in. May. America. Deeply cut foliage. Large showy, bright blue flowers.

var. **bicolor.** Upper petals rich, royal purple; lower petals pure white.

V. pubescens. 1 ft. July-August. Broad heart-shaped foliage and bright yellow flowers.

V. tricolor. (PANSY.) The Pansy hardly needs description. It has long been an indispensable flower in all gardens. We grow a choice strain of these plants and constantly add to our list the best of the newly introduced varieties.

YUCCA—Adam's Needle or Spanish Bayonet Bear Grass

Liliaceæ

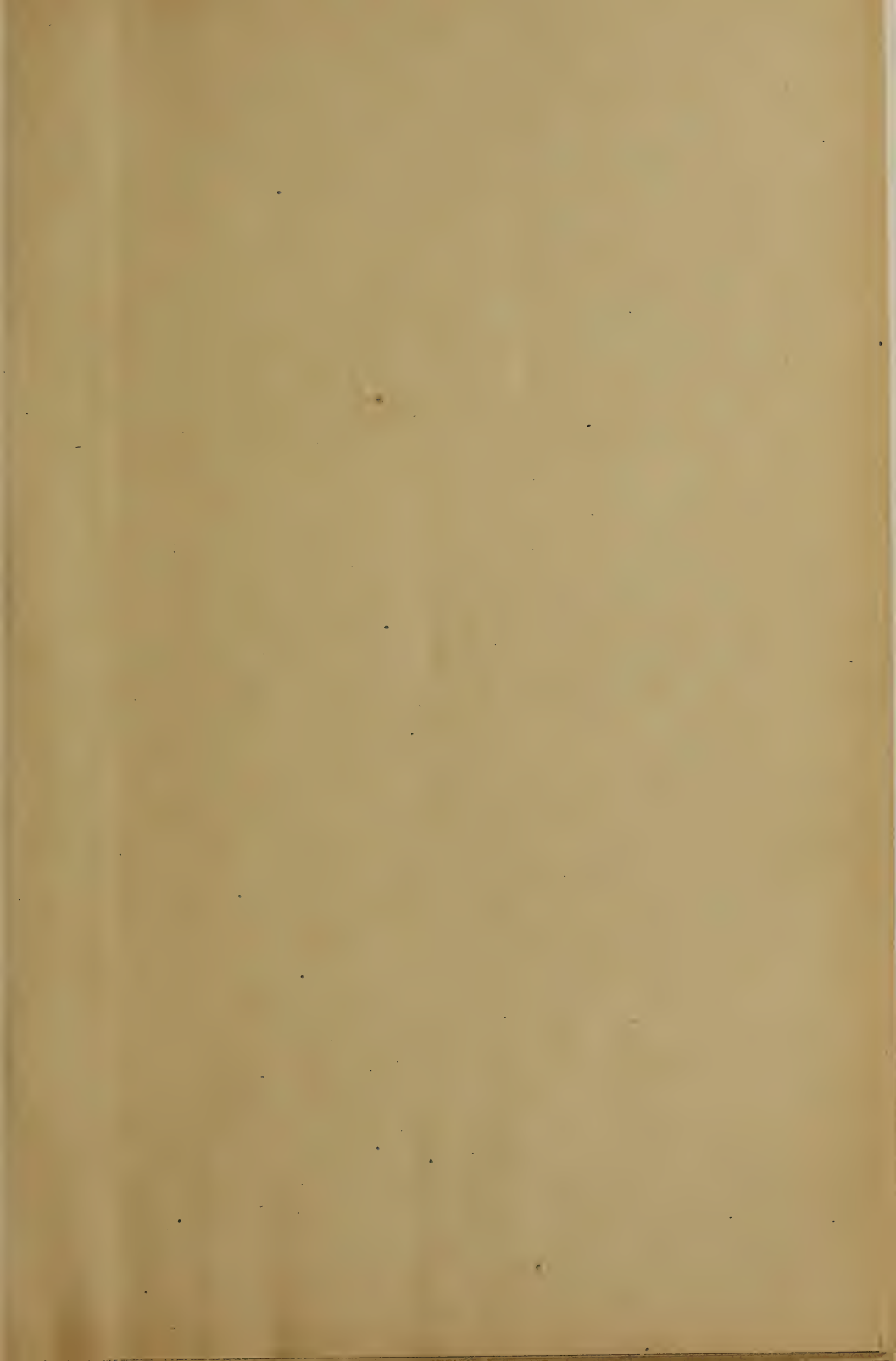
Among the ornamental herbaceous plants, this stands unchallenged as a showy plant for a large number of uses. They succeed in almost any soil, rather desiring a dry, sandy situation. The foliage is of a handsome dark green, valuable in itself for producing sub-tropical effects. Different species of this genus are found throughout the United States and some of them in California attain an enormous size.

Y. augustifolia. 2 ft. July-August. Narrow grass-like foliage and creamy white flowers. A showy dwarf species.

Y. filamentosa. 4 to 5 ft. June-July. The best known species of Yucca and best adapted to the Northwest. Has stiff, broad, sword like foliage and surmounted by tall handsome spikes of large, fragrant, creamy white flowers. Valuable in producing sub-tropical effect and a group of them upon the lawn commands instant attention when the monstrous heads of flowers are open.

var. **glaucescens variegata.** (VARIEGATED YUCCA.) A form with gold and green striped foliage.

var. **recurva.** (*Y. gloriosa* var. *recurvifolia* or *pendula.*) A graceful form with recurved foliage and slender panicles of flowers.



ORNAMENTAL DECIDUOUS* SHRUBS

FLOWERING shrubs, and those with brilliantly colored foliage, are to ornamental gardening, what the finishing touches are to the picture, or the varnishing is to furniture. They help to fill out the well round forms of groups of trees and, possessing more variety of color of flower and foliage than the large trees, they add beautiful bits of color to often otherwise plain garden work. Being comparatively small in size, they are especially useful in planting places of small extent, are comparatively inexpensive and reach maturity in a comparatively short time. They are very useful in ornamenting the foreground where it is desired to take in views above and beyond the limits of small grounds, and serve the purpose of a setting or ornamentation close up to the dwelling and over which may be viewed the more extended lawn decoration.—Maynard.

Shrubs are seldom used too much and they are frequently neglected. Without stopping to call attention to the wonderful diversity of riches from which we may select when we wish to employ shrubs, we desire only to point out that their liberal use is in accord with the natural style of landscape gardening which is now in vogue. Referring to Nature, we find shrubs distributed all about our woodland and especially along the border of our woods. A judicious arrangement of shrubbery will often obliterate more of the unpleasant, unnatural and inartistic features of the grounds than any amount of other material or other work. The union of the buildings with the grounds so that the former seems part of the latter is oftenest effected by the use of shrubs. A building with its smooth surfaces and rectangular lines, rising abruptly out of the lawn, gives a distinct note of disharmony. The remedy is to break up, and as far as possible, to obliterate the lines of demarkation. Shrubs irregularly grouped along the walls and massed in retreating angles help to do this. Their most efficient assistants are the Climbers which may cling to the walls or twine around the porches, becoming almost part and parcel of the building. Shrubs and Climbers together, judiciously placed, will often bring into the closest harmony a house and grounds which, without them, would have been at never-ending war.—Waugh.

It will be noticed that our list of shrubs includes some varieties that are not hardy enough for general culture in the North and Northwestern states. We do not recommend all varieties for the latitude of Minnesota but by far the largest number of them are successful here. We are annually testing new varieties and adding to our list such as may be of merit. For northern locations we furnish a special list of varieties that will be the best suited.

In the case of some of the very high growing shrubs, there is naturally a diversity of opinion as to whether they belong to the shrubs or among the deciduous trees. In our classification we have endeavored to follow the leading authorities. The Russian Olive is an example of this as it will be found in various catalogs to have been placed in both groups. The figures given after each variety refers to the approximate height under ordinary conditions. As with all other classes of plants, height is a matter of much variation and the figures we give should merely be regarded as an average. The same is more or less true of the blooming season, which is referred to by the name of the months following the figures giving the height. We divide the list into those having a pronounced upright growth and those of a prostrate or trailing tendency. In the latter of class are also included the deciduous climbers.

*The word *deciduous* comes from the Latin word meaning "to fall," and refers to the annual fall of the leaves on the approach of winter. The evergreen shrubs, such as Rhododendrons, etc belong to an entirely different class.

ACANTHOPANAX (See *Aralia*)**ALTHÆA** (See *Hibiscus*)**AMELANCHIER—Juneberry***Rosaceæ*

A. Botryapium var. **Success.** (SUCCESS DWARF JUNE BERRY, SHAD BERRY, SERVICE BERRY.) 4 to 5 ft. April. This is probably a sport from *A. Canadensis*, which is said to be the only American species. It bears white flowers in late April, in most locations completely covering the shrub before the foliage or flowers of the neighboring trees have commenced their growth. The dark red berries which are ripe in mid summer are very ornamental. They have a particularly agreeable flavor, much like the Huckleberry, and are of good quality for pies, sauces, etc. The foliage resembles that of the pear and changes to a bright yellow in autumn.

AMORPHA—False Indigo*Leguminosæ*

A small genus of spreading shrubs native of North America. The leaves are compound, resembling the locust, but the leaflets are finer. The flowers are borne in large panicles on the top of the branches.

A. canescens. (LEAD PLANT.) 3 ft. June. Dense spikes of bright blue flowers. It has received the local name of Lead Plant on account of the white, hairy down with which the foliage is covered.

A. fruticosa. (FALSE INDIGO.) 5 ft. June. Light green foliage. Flowers dark purplish blue. A large spreading bush and a very ornamental lawn shrub.

AMYGDALUS—Almond (See *Prunus*)

The so-called Flowering Almonds really belong to the genus *Prunus*, as they are varieties of the *P. Sinensis*, [Syn. *P. Japonica*]. To avoid confusion, we have therefore listed them under that head.

ANDROMEDA*Ericaceæ*

These are beautiful shrubs of medium height with leaves similar to the Privet. They are conspicuous thruout the season on account of flower and foliage.

A. arborea. [Syn. *Oxydendrum arboreum*]. (SORREL TREE.) 6 to 8 ft. June-August. A large shrub with glossy green, peach-like foliage, assuming brilliant autumnal coloring. Pure white, bell-shaped flowers in dense terminal racemes.

A. calyculata. [Syn. *Cassandra calyculata*]. (LEATHER LEAF.) 18 in. May. The foliage of this variety is dark green, almost evergreen in tendency. Terminal clusters of pure white flowers.

A. Mariana. (STAGGER BUSH.) 4 ft. May-June. Comparatively large, white-tinged pink flowers in terminal clusters. Long popular in the Eastern states.

A. speciosa. [Syn. *Zenobia speciosa*]. (SHOWY ANDROMEDA.) 2 to 3 ft. June. A dwarf species with showy, oval foliage and fine, pure white, bell-shaped flowers.

ARALIA—Angelica Tree (Syn. *Acanthopanax*)

Araliaceæ

The varieties of this class are especially desirable where they grow well in giving tropical appearance to the planting. They are very valuable for their foliage tho the flowers are insignificant. They are natives of China and Japan. They require protection in all latitudes.

A. Japonica. (JAPANESE ARALIA.) 8 to 10 ft. A handsome and distinct shrub from Japan, with large tripinnate leaves and spiny stems. Flowers white in large spikes in July.

A. Mandshurica. 8 to 10 ft. Native of North China. A species with very hairy and prickly bipinnate leaves.

A. pentaphylla. (FIVE-LEAVED ARALIA.) 4 to 6 ft. A pretty Japanese shrub of medium size and rapid growth. Branches furnished with spines. Leaves palmate, five lobed and pale green in color.

A. spinosa. (HERCULES CLUB, ANGELICA TREE.) 8 to 10 ft. This is an American species. An excellent shrub with slim branches covered with sharp thorns and shining bright green foliage. In some localities used as a hedge plant and for covering banks.

AZALEA

Ericaceæ

In the north central states, Azaleas are more known as house plants than for garden culture. In some favored locations however they are finding a place and we list a few of the best varieties. Those most generally used for out-door culture are the American species which are indigenous to the mountainous regions of the Atlantic states. The native sorts are the hardiest, the others being of about the same degree of hardiness as the Rhododendrons. In size they range between 18 inches to 3 feet.

A. arborescens. (FRAGRANT WHITE AZALEA.) America. A good grower. In June bears large quantities of white flowers tinged with rose and very fragrant. Foliage turns to crimson in the fall.

A. calendulaceæ. (FLAME AZALEA.) One of the showiest. In late May and June the orange red blossoms make the whole plant a blaze of color.

A. mollis. A Japanese variety. An entirely distinct class, with flowers ranging in all shades of white, red, yellow and orange, resembling those of the early Rhododendron. They are hardy in the latitude of New York.

A. nudiflora. (PINXTAR FLOWER, WOODS HONEYSUCKLE.) America. Does especially well in swampy places. Deep pink to reddish purple flowers in May.

A. Pontica. (PONTIC AZALEA.) (Ghent Varieties.) A native of Turkey. The flowers of this class are not quite so large as *A. mollis*. They are borne in great profusion in the spring, literally covering the branches. Color ranges from white to deep crimson. Some of them are fragrant.

A. Vaseyil. (SOUTHERN AZALEA.) A tall, slim grower, bearing rosy white flowers in April or May before its leaves appear. The foliage colors dark crimson in the fall.

A. viscosa. (WHITE AZALEA.) America. This sort bears fragrant white flowers in late June or July.

BACCHARIS—Groundsel Tree

Compositæ

B. halimifolia. Most of the species of this genus comes from South America. This variety and two others are the only ones indigenous to North American soil. The flower is a fluffy snow-white and is followed by the papus or seed pod which is very showy, covering the plant in September. Thrives best in sunny, well drained situations.

BERBERIS—Barberry

Berberidaceæ

From *berberys*, its Arabian name. The Barberries are a most interesting family of shrubs, varying in size from two to six feet, rich in variety of leaf, flower and habit. Their orange and yellow flowers in May or June are succeeded by a small but highly colored fruit. In some of the species the foliage assumes rich autumnal tints. The native American species furnishes several varieties. In many places they are much used for hedging purposes. For this use they give the best effect when grown as a loose hedge and not sheared too closely.

B. Canadensis. (AMERICAN BARBERRY.) 4 ft. May. A native species forming a shrub or low tree, with handsome distinct foliage and yellow flowers from April to June, followed by red berries. Not much planted as *B. Vulgaris* is superior.

B. ilicifolia. (HOLLY-LEAVED BARBERRY.) 4 to 7 ft. Large, dark green leaves which remain on the branch very late. The orange yellow flowers are quite showy.

B. Japonica. (JAPANESE BARBERRY.) 2 to 3 ft. A bushy grower but of more open form and less branched than var. *Thunbergii*. Foliage somewhat larger and colors well in the fall.

var. **Thunbergii.** (THUNBERG'S JAPANESE BARBERRY.) 2 to 3 feet. Of low, spreading growth, forming a dense, impenetrable bush. The twiggy branches are set with small, sharp thorns and in spring are covered with small yellow flowers succeeded by brilliant scarlet berries. The foliage takes a splendid autumn coloring of gold and scarlet.

B. Sieboldii. (SIEBOLD'S BARBERRY.) 2 to 4 ft. A Japanese form with very showy, solitary fruits of comparatively large size.

B. Sinensis. (CHINESE BARBERRY.) 2 to 3 ft. A handsome form with slender, graceful branches and very spiny, bright green foliage which turns to purplish bronze in the fall. Flowers bright yellow; berries blood red.

B. vulgaris. (EUROPEAN BARBERRY, COMMON BARBERRY.) 5 to 6 ft. An upright grower with thorny branches and pretty, light green foliage. The yellow flowers of early summer are followed by dark red berries.

var. **purpurea.** (PURPLE-LEAVED BARBERRY.) Similar to *B. vulgaris* in habit but the foliage is a deep rich purple. A showy and most effective shrub. The color is distinct and met with in few other shrubs or trees.

CALLICARPA

Verbenaceæ

C. purpurea. (BEAUTY-FRUIT.) A graceful shrub with long, slender branches, bearing small, long, drooping flowers in August. These are followed by violet colored berries which literally cover the branches. One of the showiest shrubs in autumn.

CALYCANTHUS

Calycanthaceæ

C. floridus. (CAROLINA ALLSPICE, SWEET-SCENTED SHRUB, STRAWBERRY SHRUB.) 4 ft. Blooms more or less all summer. A native, deciduous shrub, remarkable for the scent of the flowers as well as for their peculiar purplish brown color. It is a native of the southern states and perfectly hardy on the Atlantic seaboard. The wood also is fragrant and that of this species is used in the adulteration of cinnamon.

CARAGANA—Siberian Pea Tree

Leguminosæ

C. arborescens. 10 to 15 ft. June. By some this is cataloged under deciduous trees but in the North and West it belongs among tall growing shrubs. A most useful ornamental species introduced from Tartary and Si-

beria. Its numerous yellow, tapering twigs and very small pinnate leaves are of the same character as those of the Acacias, but much smaller and of a rare golden green color. The flowers are small, yellow, and produced singly or in clusters. It is a shrub of marked beauty in early summer by the contrast it presents with the darker and less delicate foliage of others. A fine shrub for low screens.

CARYOPTERIS

Verbenaceæ

C. mastacanthus. (BLUE SPIREA.) 2 to 3 ft. Introduced from China in 1884. A pretty autumn blooming, shrubby plant producing clusters of beautiful blue, fragrant flowers in great profusion from September until frost. Dies to the ground in winter. This should be classed among the herbaceous plants but as it is generally found among the shrubs in other catalogs, we place it here to avoid confusion.

CEANOTHUS

Rhamnaceæ

C. Americanus. (NEW JERSEY TEA OR RED ROOT.) 3 ft. June-July. An upright growing shrub, with bright green foliage and bearing small, white flowers in terminal umbels. Valuable for planting on dry banks. This shrub attained considerable notoriety during the American Revolution on account of its leaves being dried and used as a substitute for tea.

CEPHALANTHUS—Button Bush

Rubiaceæ

C. occidentalis. (BUTTON BUSH.) 4 to 5 ft. July. A showy, native shrub, particularly desirable in damp soils and will thrive in almost clear water. Clean glossy foliage and peculiar spherical balls of small white flowers, hanging by a short stem.

CHIONANTHUS

Oleaceæ

C. Virginica. (WHITE FRINGE OR FRINGE TREE.) 5 to 7 ft. May-June. An American species and a desirable ornamental shrub of easy cultivation. Dark green foliage and bears beautiful fringe-like flowers in terminal panicles.

CLETHRA

Ericaceæ

C. alnifolia. (WHITE ALDER, SWEET PEPPER BUSH.) 4 to 5 ft. July-August. A dense growing shrub with dark green, dentate foliage and showy, upright spikes of creamy white, very fragrant flowers. A choice plant for borders and groups. Very desirable on account of its late blooming season.

COLUTEA

Leguminosæ

C. arborescens. (BLADDER SENNA, TREE COLUTEA.) 6 to 8 ft. July. A rapid growing shrub with delicate Acacia-like leaves of a warm, light green color. Its flowers are small, butterfly-shape and yellow, followed by large bladder-like pods of a reddish tinge when ripe.

CORNUS—Cornel or Dogwood

Cornaceæ

An important genus of ornamental shrubs, most of them hardy and most of them particularly conspicuous for their brilliant colored bark. A few species are of sufficient stature to be classed among deciduous trees. They have been receiving considerable attention of late years from the landscape gardener and they have many uses. Those with conspicuous bark are especially desirable in massed groups in contrast with other shrubs, and offer relief to the more sombre tones when the leaves have fallen. Some of the varieties are also finding favor as hedge shrubs for loose or open border.

C. alba. [Syn. *C. Siberica.*] (SIBERIAN DOGWOOD.) 5 to 6 ft. A strong grower with erect and stout, bright red branches. Useful for shrubbery and for winter effects.

var. **aurea variegata.** A strong grower with coral red bark and foliage beautifully marked with creamy white.

var. **elegantissima.** Similar to the above. Foliage marked with deep yellow and holds its color well even in sunny situations.

C. alternifolia. 5 to 8 ft. A distinct and graceful form. The branches, arranged in whorls, give the effect of lying in tiers. The bark is glossy. The creamy white flowers are followed by dark blue berries.

C. mascula. (CORNELIAN CHERRY.) 5 to 7 ft. A beautiful shrub of dense form with glossy foliage and yellow flowers in April, followed by scarlet berries in the fall.

C. paniculata. (PANICLED DOGWOOD.) 5 to 8 ft. Smooth ash colored bark. Pointed leaves, light green above, whitish beneath. Flowers greenish white; fruit white.

C. sanguinea. (EUROPEAN RED OZIER DOGWOOD.) 5 to 8 ft. Flowers greenish white in flat cymes followed by white fruit. Bark deep red, very attractive in winter. It is a striking shrub wherever used and one of the most largely planted.

var. **elegantissima variegata.** 4 to 5 ft. One of the most desirable shrubs with variegated foliage. The leaves are broadly margined with white and some are almost entirely white. The bark is bright red in winter. A choice variety.

C. sericea. (SILKY CORNELL.) 5 to 8 ft. A variety with deep red bark and silky, dark green foliage, lighter beneath. Flowers in June and July are followed by bluish berries in autumn.

C. stolonifera. (AMERICAN RED OZIER DOGWOOD, KINNIKINNICK.) 6 to 8 ft. This well known native of our northern forests is being more and more used in ornamental planting, especially in the northern states where its absolute hardiness is appreciated. The bark is a dark, rich red and contrasts beautifully with the darker tone of other trees and shrubs. It gives a noticeable touch of color even in the summer but is more pronounced in winter. Flowers in dense cymes followed by white berries.

CORYLUS—Hazelnut, Filbert

Corylaceæ

The filbert of commerce is *C. avellana*, which is a native of Italy. Some varieties of this species are used in the milder parts of the country for ornamental purposes. For the west, *C. Americana* is the most important.

C. Americana. (COMMON AMERICAN HAZELNUT.) 4 to 8 ft. This well known shrub, thriving luxuriantly in our native woods, is being used more and more for ornamental effects. Its rich foliage and erect compact habit of growth makes it particularly desirable for planting in massed groups where a solid color is desired. It is a much prettier shrub in cultivation than in its wild state and responds readily to good soil altho this is not necessary and it, in fact, succeeds on situations refused by other shrubs.

C. avellana var. **atropurpurea.** (PURPLE-LEAVED FILBERT.) 4 to 6 ft. Handsome broad foliage of a deep purplish red color.

C. avellana var. **laciniata.** (CUT-LEAVED FILBERT.) 4 to 8 ft. An ornamental variety with deeply cut foliage.

COTONEASTER

Rosaceæ

C. Simondsii. (SIMOND'S COTONEASTER.) 3 to 4 ft. A dwarf shrub of dense habit with small roundish foliage. Numerous white flowers in May, followed later by deep orange fruits. They are only semi-hardy but where they can be made to come into flower they are a desirable addition to the shrubbery.

CYDONIA—Quince

Rosaceæ

The species here described are all closely related to the quince of commerce, *C. Vulgaris*. Where hardy, they rank among the choicest shrubs. They are of a rather straggling growth but if planted right, this is not a drawback. Their brilliant flowers are their strongest point. The foliage also is very handsome. Like the flowering plums and crabs, the blossoms cover every branch and twig, and generally appear before the leaves are developed.

C. Japonica. [Syn. *Pyrus Japonica*.] (JAPAN QUINCE.) 5 to 8 ft. Has bright scarlet crimson flowers in great profusion in the early spring when the shrub is in a blaze of color.

var. **alba.** A beautiful variety with delicate white and blush flowers.

var. **atrosanguinea fl. pl.** Semi-double scarlet flowers.

var. **Maulei.** (MAULE'S QUINCE.) A dwarf species with smaller foliage. Flowers orange red.

CYTISUS—Laburnum

Leguminosæ

C. purpureus. [Syn. *Laburnum vulgare*.] (PURPLE-FLOWERED LABURNUM.) 18 in. A low growing, roundish bush with purplish bark and dark green, oval leaves. Clusters of pea-shaped flowers in May. The upper petals are purple, with pure white under petals.

DAPHNE—Mezereon

Thymelacææ

D. Mezereum. (MEZEREON.) 2 to 3 ft. April-May. A native of northern Europe Upright habit of growth. Showy red flowers succeeded by crimson fruits. One of the very earliest shrubs to bloom and desirable on that account.

var. **alba.** (WHITE MEZEREON.) White flowers succeeded by orange colored fruit.

DESMODIUM (See Lespedeza)

DEUTZIA

Saxifragacææ

This genus is named after J. Deutz, a sheriff of Amsterdam. We are, however, indebted to Japan for the plants themselves. Their luxuriant foliage and profusion of attractive flowers have given them a popular place among the flowering shrubs. The flowers are produced in the latter part of June in racemes four to six inches long.

D. crenata. 4 to 6 ft. Showy white-tinged pink flowers.

var. **candidissima plena.** (DOUBLE WHITE DEUTZIA.) A vigorous and graceful grower.

var. **fl. pl.** Double white flowers, tinged with purple.

var. **Pride of Rochester.** A distinct variety with double white flowers tinged with pink.

var. **rosea plena.** (DOUBLE PINK DEUTZIA.) Flowers tinted with rosy white.

D. gracilis. (DWARF DEUTZIA, JAPAN SNOWFLOWER.) A charming species of dwarf habit. Introduced from Japan by Dr. Siebold. Flowers pure white. It is a low, dense grower and entirely covered with bloom in its season. Also makes a fine pot plant, and florists grow them for winter forcing.

D. Lemoinei. A hybrid variety. An early bloomer, the branches being covered with erect panicles of pure white, well opened flowers.

D. scabra. A vigorous grower with rough, dull green foliage and clusters of showy, double white, bell-shaped flowers.

DIERVILLA (See Weigela)

ELÆAGNUS—Oleaster, Wild Olive

Elæagnacea

A genus of showy shrubs or small growing trees. They all have peculiar, silvery olive-like leaves which renders them valuable for ornamental planting to contrast with the darker hues of most other shrubs.

E. angustifolia. (RUSSIAN OLIVE OR RUSSIAN OLEASTER.) 12 to 20 ft. Introduced into the North Central States by the Russian Mennonite emigrants. For the northern states, this is the finest of the genus. It forms a large sized shrub or small tree with a rounded top and narrow leaves about three inches long, light green above and silvery white beneath. The small yellow blossoms appear in profusion the latter part of June. They have a pronounced and distinct fragrance that is very agreeable and unlike that of any other flower we know. It is extremely hardy and succeeds well in very dry locations. Has been thoroly tested in the Dakotas. Besides its value as an ornamental tree or shrub, it is proving a good stock hedge and also seems adapted to the purposes of ornamental hedges or screens.

E. argentea. (SILVER BERRY.) 5 to 8 ft. July. A native of Manitoba, Minnesota and the Dakotas. Forms a handsome shrub with large leaves (comparatively), silvery on both sides. The flowers are small and yellow, quite fragrant. They are followed by silvery berries, resembling *E. angustifolia* but smaller.

E. hortensis. (EUROPEAN OLEASTER.) 15 ft. May. This variety has been known in the eastern states for a long time. It forms a large shrub or small tree with the characteristic foliage of this genus.

E. longipes. [*Syn. edulis.*] (JAPAN OLEASTER.) 8 ft. June. This is a rare species, very desirable where hardy. Oval, light green foliage, silvery beneath. The bright yellow flowers appear in late June. In July the bush is covered with bright red berries of large size which make it very ornamental. The fruit is also quite palatable; in color, orange red studded with scales of gold.

E. parvifolia. (SMALL-FLOWERED OLEASTER.) 3 ft. July. A very distinct Himalayan species with small oval foliage.

EUONYMUS—Strawberry Tree, Spindle Tree, Burning Bush

Celastracea

An extensive genus of shrubs or low growing trees, most of them being of a very ornamental character. They are especially attractive on account of their showy fruit which adorns the bush in autumn. The foliage also is a very desirable feature in all varieties.

E. alatus. (CORK-BARKED EUONYMUS.) 5 to 8 ft. Of dwarf, compact habit with corky bark. Yellowish flowers followed by red fruits. Foliage assumes autumnal tints of red.

E. Americana. (STRAWBERRY BUSH.) 5 to 8 ft. A slender grower of dense habit. Foliage light green. Flowers reddish green in June. Fruits crimson pink.

E. atropurpureus. (BURNING BUSH, WAAHOO.) 8 to 10 ft. This is a native species and for general uses considered the best variety in this family.

It has handsome, lustrous green foliage which turns to scarlet in autumn. The purple flowers in June are followed by bright crimson fruits which grow on all the branches and branchlets.

E. Europæus. (SPINDLE TREE.) 5 to 8 ft. Of vigorous, compact growth. Foliage not so large as *E. atropurpureus* but of good color. Rose colored fruits.

E. latifolius. (BROAD-LEAVED EUONYMUS.) A tall grower with broad, glossy green leaves. Fruit of a deep blood red color.

E. nanus. (DWARF SPINDLE TREE.) 2 to 3 ft. Low growing, almost prostrate. Green foliage turning to purple in autumn.

EXOCHORDA—Pearl Bush

Rosaceæ

E. grandiflora. [Syn. *Spirea grandiflora*.] This is from China and the only species yet in cultivation. It is a smooth, vigorous growing shrub with lanceolate leaves and handsome red flowers in racemes in May and June. The flowers are of large size individually and are borne in great profusion.

FORSYTHIA—Golden Bell

Oleaceæ

A small genus of ornamental shrubs introduced from the north of China in 1849. They offer a fine class of spring blooming varieties, being among the earliest. The bright blossoms appear before the foliage.

F. Fortuneii. (FORTUNE'S FORSYTHIA.) 8 ft. April-May. An upright grower, with deep green foliage and pendulous, trumpet-shaped, bright yellow flowers.

F. intermedia. 5 to 8 ft. Flowers bright golden yellow. Foliage glossy green, like *viridissima* and very similar. Said by some to be hardier.

F. suspensa. (WEEPING FORSYTHIA.) 5 to 8 ft. A shrub resembling *F. Fortuneii* in its flower but the growth is somewhat drooping.

F. viridissima. 6 ft. May. Leaves and bark dark green. Flowers deep yellow. Of open growth and a fine shrub for general use.

GENISTA—Broom

Leguminosæ

G. tinctoria. (WOODWAXEN, DYER'S GREENWEED.) 18 in. June. This is said to be an escape from Europe and is now common in many of the Eastern states. Deep green branches, glossy green foliage and showy yellow flowers in early summer. A good plant for covering poor and rocky soil.

HALESIA—Snowdrop or Silver Bell Tree

Styracaceæ

H. tetraptera. 8 to 12 ft. A free flowering shrub with beautiful, pure white, drooping flowers on long slender pedicles, much resembling the Snowdrop. The seeds are curiously winged and from one to two inches in length. Thrives well in poor soil, preferring a location near water.

HAMAMELIS—Witch Hazel

Hamamelidaceæ

H. Virginica. 8 ft. October-November. A native, free growing shrub with well known medicinal properties. It has ovate, slightly downy leaves, like the Hazel, turning to brilliant yellow and purple shades in autumn. The yellow flowers are remarkable for their appearance in late autumn just as the leaves are turning and about to fall.

HIBISCUS—*Althæa*, Rose of Sharon

Malvaceæ

The *Hibiscus Syriacus* and its sub-varieties is an important branch of this genus of ornamental shrubs and plants. They have rich green foliage and all bear very large and showy flowers. Particularly desirable on account of their blooming in August and September when scarcely any other flowers are in bloom. They are free growers and succeed in any ordinary garden soil. They average from 5 to 8 ft. in height.

H. Syriacus var. **Boule de Feu**. Very large, single flowers, of a violet red color.

var. **alba plena**. Double white.

var. **bicolor**. Double pink.

var. **camellæflorus**. Double white, with light pink center.

var. **foliis variegata**. (Syn. *foliis argenti marginata*.) Double purple flowers. Foliage variegated green and creamy white.

var. **Jeanne d'Arc**. Pure white, double.

var. **Lady Stanley**. Double, bluish white.

var. **Leopoldii**. Double, flesh color, shaded rose.

var. **pæoniiflora**. Double, rosy purple flowers.

var. **purpurea**. Single, purple flowers.

var. **purpurea fl. pl.** Double, purple flowers.

var. **rubra plena**. Double red flowers.

var. **totus albus**. Single, pure white.

HIPPOPHÆ—Sea Buckthorn

Elæagnaceæ

H. rhamnoides. 5 to 8 ft. A strong growing shrub with curious foliage of a gray green color. Minute yellow flowers in May, succeeded by orange colored berries. It is native near salt water and succeeds best in such locations.

HYDRANGEA

Saxifragaceæ

This great genus of showy shrubs, best known by its representative *H. paniculata grandiflora*, was introduced from China in 1790. No class of shrubs have showier flowers or are more widely used for ornamental purposes. There are several varieties of great value for pot culture but they will not be listed in this class.

H. arborescens. 5 to 8 ft. A native variety and particularly adapted to shady positions. Foliage of good color and the white flowers in flat corymbs appear in June.

H. paniculata. 5 to 8 ft. A vigorous grower with light green foliage and bearing in September large upright panicles of creamy white flowers which later turn to purple.

var. **grandiflora**. 6 to 8 ft. August-September. The showiest of all autumn flowering shrubs, bearing immense heads of creamy white flowers which, with the approach of cold weather, turn to rich shades of pink and coppery red. The large individual flowers are sterile and the panicles remain intact long after the first frosts. In fact if picked off at the right time, they can be carried indoors to dry and they retain their brilliant autumnal coloring for several months. To produce the best effects, these should be planted in masses or against the back ground of other and higher shrubbery. It also makes a splendid single specimen for the small lawn.

H. quercifolia. (OAK-LEAVED HYDRANGEA.) 4 to 5 ft. August. A native of rather striking habit, with large, deep green, oak-shaped foliage which turns to a bronzy purple in autumn. Purplish white flowers in panicles. Prefers moist and shady places.

HYPERICUM—St. John's Wort

Hypericaceæ

Certain plants of this genus formerly had a high reputation among ignorant communities for driving away evil spirits and are also said to possess powerful medicinal properties. They all prefer shady, damp places altho they are made to succeed in other soils. A popular shrub thru many centuries.

H. aureum. 3 ft. July-September. A fine medium growing shrub, forming a dense head and producing a constant succession of brilliant, golden yellow flowers in great abundance for several weeks.

H. densiflorum. 2 ft. August. A dense branched shrub with myriads of minute bright yellow flowers in late summer.

H. Kalmianum. 2 to 3 ft. June. Forms a compact shrub covered in season with golden yellow flowers of medium size.

H. Moserianum. 2 to 3 ft. One of the showiest of all small shrubs. Shining foliage on pendulous branches. Flowers deep golden yellow, often two inches in diameter, borne in midsummer.

ILEX—Deciduous Holly, Winter Berry

Aquifoliaceæ

I. verticillata. (WINTER BERRY OR BLACK ELDER.) 6 ft. June. Shining, deep green foliage and showy crimson fruits which render the shrub conspicuous in early autumn. Should not be confused with the evergreen holly used for Christmas decoration.

KERRIA—(Corchorus)

Tiliaceæ

K. Japonica. (JAPAN CORCHORUS.) 4 to 5 ft. A free flowering shrub with handsome, light green, finely toothed foliage and showy yellow globular flowers thruout the summer.

var. **argentea variegata.** [Syn. *foliis variegata.*] A dwarf variety. Small green foliage edged with white. A choice dwarf shrub.

LESPEDeza—(Syn. Desmodium), Bush Clover

Leguminosæ

L. bicolor. 5 to 8 ft. A graceful shrub with pendulous slender branches and clover-like foliage. The flowers are pea-shaped and in shades of pink and violet. Borne in drooping clusters.

L. Sieboldii. [Syn. *Desmodium Japonica.*] This probably belongs among the perennial herbaceous plants as it seems to kill to the ground in winter everywhere. Attains a height of about three feet and bears rosy purple or white flowers in September in long racemes.

LIGUSTRUM—Privet

Oleaceæ

Where it succeeds well, the Privet in all its varieties has become a very popular shrub. It lends itself to a number of ornamental purposes, the best known being its use in hedges and borders. The foliage of most sorts is sub-evergreen and the flowers of some are quite showy.

L. Ibot. (CHINESE PRIVET.) 4 to 5 ft. A distinct variety with large white flowers produced in great profusion and very fragrant. Long intertwined branches.

var. **Amurense.** (AMoor RIVER PRIVET.) 5 to 7 ft. This is of lighter, slimmer growth than the above. Light green oval foliage and showy spikes of pure white flowers.

var. **Regelianum.** (REGEL'S PRIVET.) 4 to 5 ft. A dense shrub with twiggy, spreading branches, drooping at the end. Forms a graceful, symmetrical bush sufficiently dense for hedge purposes without trimming.

L. ovalifolium. (CALIFORNIA PRIVET.) One of the best known hedge plants where it is hardy. Handsome, deep green, almost evergreen foliage. Transplants easily and stands any amount of trimming.

L. Sinensis. Of broader habit than var. *Amurensis*. Foliage is light green and borne on slender spreading branches. Satisfactory for open hedges.

L. vulgaris. (COMMON PRIVET.) 5 to 7 ft. Forms a broad bush with showy spikes of white flowers in June, followed by black berries in clusters. Succeeds where tree roots interfere with other plants.

LONICERA—Honeysuckle

Caprifoliaceæ

This is an extensive genus of upright and climbing shrubs and one which furnish us many of our most popular ornamental varieties. They are free bloomers and of easiest culture. Besides being of fine dense growth, they are ornamental from the stand point of foliage, flower and fruit. Many of them make admirable hedge plants and are being more and more used for that purpose. The climbing varieties will be found described under Climbing and Trailing Shrubs.

L. Alberti. [Syn. *hispida*.] (ALBERT REGEL'S HONEYSUCKLE.) 3 to 5 ft. July. A dwarf species of dense growth with narrow, light green foliage and fragrant, pink flowers.

L. bella albida. 5 to 7 ft. White flowers; showy red fruit in great profusion.

L. bella candida. 5 to 7 ft. Another distinct variety with red fruit.

L. fragrantissima. (FRAGRANT UPRIGHT HONEYSUCKLE.) 5 to 8 ft. April-May. A spreading shrub with deep green foliage and fragrant, small pink flowers which appear before the leaves.

L. Morrowii. (MORROW'S BUSH HONEYSUCKLE.) 5 ft. July. A Japanese variety forming a broad spreading bush with yellow flowers followed by showy crimson fruits.

L. Ruprechtiana. 5 to 7 ft. A fine variety from Manchuria. Particularly desirable on account of its showy red fruit.

L. Tartarica. (TARTARIAN HONEYSUCKLE.) This is the best known variety in the western states and with its sub-varieties it can be found in nearly all ornamental planting. The newer variations, var. *splendens*, var. *grandiflora*, etc., are so much superior to the old type that they are rapidly superceding it. All form vigorous upright shrubs from 8 to 12 ft. in height and are valuable for their flower and fruit alike. *L. Tartarica* proper has pink flowers in May and June.

var. **alba.** (WHITE TARTARIAN HONEYSUCKLE.) The well known white flowering variety. Otherwise similar to the above.

var. **grandiflora.** (RED TARTARIAN HONEYSUCKLE.) Flowers deep pink, almost red and larger than white.

var. **splendens.** A fine variety of the Tartarian Honeysuckle. Flower dark rose with a darker center. This and var. *grandiflora* are two of the best of all the Honeysuckles in our estimation.

MYRICA—Bayberry

Myricaceæ

M. cerifera. (WAX MYRTLE, CANDLE BERRY.) 5 to 8 ft. This shrub has dark green fragrant foliage. The reddish flowers in May are followed in late autumn by clusters of fruits which are covered with a grayish waxy substance. Its chief charm lies in its pleasing foliage and it thrives well in sandy light soil.

PAVIA—Dwarf Horse Chestnut

(See *Æsculus* under Deciduous Ornamental Trees.)

PHILADELPHUS—Syringa or Mock Orange

Saxifragaceæ

A comparatively small genus of ornamental shrubs nearly everyone of which are of great merit. The flowers of nearly all have a distinct orange blossom fragrance, some stronger than others. It is an unfortunate fact that the common name "Syringa," which has been applied to varieties in this genus, is the botanical name of the Lilac which is an entirely different race of plants. This has always caused and still causes a great amount of confusion. To avoid this difficulty when a common name is desired to designate a variety of this class, the equally well known name "Mock Orange" should be used. Both the Lilacs and the Mock Oranges are so widely used and have so many desirable varieties that those interested in correct botanical classification should assist in righting this long standing error.

P. coronarius. (SWEET MOCK ORANGE.) 8 to 12 ft. June. The old and well known Mock Orange. A graceful, upright bush with long branches covered with dark green foliage. In June completely covered with showy pure white flowers of a most delightful fragrance. Probably the most fragrant of the class.

var. **aureus.** (GOLDEN MOCK ORANGE.) 3 to 5 ft. A compact shrub with bright yellow foliage which retains its color well thruout the season. Very effective in grouping as a contrast to the darker foliage of others.

var. **flora plena.** (DOUBLE FLOWERED MOCK ORANGE.) A variety with partially double, very fragrant flowers.

P. Gordonianus. (GORDON'S MOCK ORANGE.) 8 to 12 ft. July. One of the strongest growers, with very large, pure white flowers, very slightly fragrant. Particularly valuable on account of its late blossoming season and the good size of its flower.

P. grandiflorus. (LARGE-FLOWERED MOCK ORANGE.) 8 to 12 ft. June. Very showy, large flowers, usually borne in threes. Scentless. It is of rapid growth with reddish bark. Branches somewhat straggling.

var. **laxus.** 6 ft. June. Broad habit of growth and large single, scentless flowers. Broad pointed foliage.

P. inodorus. 8 ft. June-July. Large, scentless flowers, both singly and in three.

P. microphyllus. (SMALL-LEAVED MOCK ORANGE.) 4 ft. Of dwarf habit and slender growth with small, white flowers. A pretty, small shrub.

P. Lemoinei. (LEMOINE'S MOCK ORANGE.) 7 to 10 ft. June. A graceful shrub with very rich foliage and large, pure white fragrant flowers which are borne in clusters.

var. **erectus.** A form of the above with very erect habit, bearing fragrant yellowish flowers in June. A free bloomer.

P. Zeyheri. (ZEYHER'S MOCK ORANGE.) 5 to 8 ft. June. A hybrid of *P. coronarius*. Lower and more spreading in growth. Pure white, slightly fragrant flowers.

var. **speciosissimus.** Of graceful habit with branches bending slightly at the tips. In June the bush is densely covered with very large, pure white, slightly fragrant flowers. This is the showiest of the whole group.

POTENTILLA—Cinquefoil

Rosaceæ

P. fruticosa. (SHRUBBY CINQUEFOIL.) 3 ft. July-September. An upright growing shrub. Foliage narrow with a silky under-surface. Commencing in July it bears golden yellow flowers thruout the summer. An excellent plant for rocky places, and succeeds in either wet or dry soils.

PRUNUS—Plum and Almond

Rosaceae

As explained under the head of *Amygdalus*, the so-called Flowering Almonds are really branches of *Prunus Sinensis*. All varieties of this class offer striking specimens that are desirable for the mass of early bloom which in nearly every species comes before most other ornamental shrubs have even put forth any great amount of foliage. They vary in the degree of their hardiness. Most of them are desirable in Minnesota. *P. nigra* and *P. Americana* should perhaps be classed among trees but to avoid confusion we list them all together under this head.

P. Americana. (NATIVE WILD PLUM.) 8 to 15 ft. From this species come the principal fruiting varieties that are hardy in the Northwest. But in addition, it is also valuable as an ornamental shrub or small tree. It forms a graceful well shaped head, varying with different varieties. The foliage is a rich green and in the early spring before the leaves are out, it is covered with a cloud of beautiful, snow white flowers of fine fragrance.

P. Japonica flore alba pleno. [Syn. *Amygdalus pumila alba*, *Amygdalus communis* var. *alba fl. pl.*, *P. Sinensis* var. *alba plena*.] (DOUBLE WHITE FLOWERING ALMOND.) 4 ft. May. Handsome, double white flowers in great profusion completely covering the branches.

P. Japonica flore rubro pleno. [Syn. *P. Sinensis rubra plena*, *Amygdalus pumila*, *Amygdalus communis*.] (RED FLOWERING ALMOND.) 3 to 4 ft. May. A charming, low growing shrub which in its season is covered with double pink or red flowers.

P. maritima. (BEACH PLUM.) 5 to 9 ft. A native of the Atlantic coast and in that section desirable for bleak exposures and sea coast planting. White flowers followed by crimson or purple fruits.

P. nigra. (EARLY FLOWERING NATIVE PLUM.) Considered by some authorities to be a branch of *P. Americana*, which see. However, nearly all varieties are two weeks earlier both in flower and fruit. This is a very desirable feature as it extends the season.

P. Pissardi. (PURPLE-LEAVED PLUM.) 7 to 10 ft. Young branches are very dark purple. The leaves when young are lustrous crimson changing to a dark purple and retain this tint until they drop in autumn. Flowers small, white, single, covering the trees.

P. pumila. (DWARF CHERRY, SAND CHERRY.) 3 ft. April-May. A dense growing bush with white flowers in advance of the foliage and followed by black fruit. A native of the central states and eastward.

var. **Besseyi.** (WESTERN SAND CHERRY, ROCKY MOUNTAIN CHERRY.) 3 to 4 ft. May. This is the western Sand Cherry native from Kansas and Colorado northward. Better adapted to this section than the preceding. Being vigorous and absolutely hardy, it has many ornamental purposes. The white blossoms appear in early May and are followed by black fruit three-quarters to one inch in diameter. It has handsome glossy foliage and is desirable for certain classes of hedge work.

var. **Compass-Cherry-Plum.** 6 to 10 ft. May. This variety is described at length as a fruit in our general catalog of Tree and Small Fruits. It has also a distinct merit for ornamental purposes, having the early blooming characteristics of the genus and the peculiar cherry-like habit of growth, not possessed by the plums. It is in reality a cross between *P. Besseyi* and *P. Hortulana* which later comprises the Miner group of plums.

P. tomentosa. 3 to 5 ft. May. A pretty species from Japan. It has beautiful, plaited leaves and bears in May inconspicuous flowers which are followed by small red fruits resembling currants.

P. triloba. (DOUBLE FLOWERING PLUM.) 4 to 6 ft. May. A broad spreading shrub of vigorous growth with three lobed leaves preceded by light pink, very double flowers which completely surround and cover the branches so as to entirely hide them. A native of China and one of the finest, hardy, spring-blooming shrubs under cultivation. As a single lawn plant it is very effective and also a good shrub to work in groups with other shrubs.

P. serotino. See *Cerasus Serotino* under Deciduous Trees.

P. Virginiana var. **demissa**. (WESTERN CHOKE CHERRY.) 8 to 12 ft. This well known, native shrub is being used more each year in ornamental planting. Its perfect hardiness and willingness to grow in rather exposed conditions and on poor soil gives it a value in this line. In growth it forms a large compact shrub or small tree with good foliage and it is a distinctly ornamental species.

PYRUS—Choke Berry

Rosaceæ

(See also *Pyrus* under Deciduous Trees.)

P. arbutifolia. (CHOKE BERRY.) 6 ft. May. A vigorous, densely branched shrub. In May it is covered with clusters of delicate white flowers and the red fruits which follow hang on well into the winter. The foliage assumes rich autumnal tints.

P. floribunda. (RED CHOKE BERRY.) An upright grower. Flowers white, tinged with red and followed by bright red fruits.

var. **nigra**. Similar to the above, but with deep glossy black fruits.

RHAMNUS—Buckthorn

Rhamnaceæ

R. Catharticus. (COMMON BUCKTHORN.) 4 to 6 ft. June-July. One of the best plants for ornamental hedges. The ovate, dark green leaves are attractive thruout the season. Flowers small and inconspicuous. Branches are thorny. The black fruits are about the size of a pea. It stands shearing well and is easily kept trimmed to any desired height and form. Does not furnish out as thickly as Buffalo Berry after trimming but its deeper color is preferred by some. In the Northwest this and the Buffalo Berry, see *Shepherdia argentea*, are probably the most used of any deciduous shrubs for hedge purposes.

R. frangula. [Syn. *R. Carolinianus*.] (ELDER, BUCKTHORN, INDIAN CHERRY.) 6 ft. June. This species forms a small bush of rather irregular shape. In summer they bear small greenish flowers which are followed by very ornamental, red and black fruit in great profusion. The flowers are rather inconspicuous but the fruit is a decidedly attractive feature.

RHODOTYPUS—White Kerria

Rosaceæ

R. kerrioides. 4 ft. All summer. A slender, branching shrub, almost evergreen in character. Remarkable for its large, terminal, pure white flowers resembling those of the *Althea* but smaller. Well adapted for the lawn, contrasting well with the *Weigela*. Introduced from Japan in 1886.

RHUS—Sumach

Anacardiaceæ

An extensive genus of deciduous shrubs native of the United States, Europe and Asia. They differ widely in size and form but nearly all are very desirable from the beautiful colors their leaves assume in autumn. It may be interesting to know that the Poison Ivy or Poison Oak is really a branch of this family. The ornamental species, however, as here listed, are perfectly harmless. For grouping, either by themselves as a class or with other shrubs, they are especially desirable and they are now extensively used in all landscape work.

R. aromatica. [Syn. *Canadensis*.] (FRAGRANT SUMACH.) 4 to 6 ft. April-May. A spreading bush with thick foliage which exudes a pleasant fragrance, especially when crushed. The pale yellow flowers are borne in dense spikes and are followed by orange red berries in midsummer. In autumn the foliage turns to dark crimson.

R. copallina. (SHINING SUMACH, DWARF SUMACH.) 5 ft. July. A dense grower with rich, shining dark green foliage which turns to brilliant shades of red in the fall. The yellowish flowers in July are followed by showy heads of scarlet seeds. The latest of the Sumachs to flower.

R. cotinus. (PURPLE FRINGE OR SMOKE TREE.) A vigorous, bushy grower with very ornamental foliage and bearing very large panicles of yellowish purple, feathery flowers in June. Very distinct in every way. There is nothing else like it in shrub or plant. The foliage of this variety also assumes shades of reddish brown in autumn.

var. **atropurpurea.** (TRUE PURPLE FRINGE.) A form with flowers of a deep reddish purple. Very distinct and showy.

R. glabra. (SMOOTH SUMACH.) 8 ft. June Handsome, pinnate foliage, assuming splendid autumn coloring. Showy spikes of crimson fruits.

var. **laciniata.** (CUT-LEAVED SUMACH.) A variety of the above with deeply-cut, fern-like foliage. An elegant plant wherever used. Very few shrubs of its size have this characteristically beautiful cut foliage.

R. typhina. (STAGHORN SUMACH.) 8 to 12 ft. A showy, broad headed shrub with very large, long, compound foliage, light green in color, changing to showy autumnal shades of red and yellow. The new growth of the smaller branches is clothed with a peculiar down, giving an appearance similar to that of the growing horn of a deer. The bark below is of a rich orange green color. An elegant plant for grouping where rich foliage effects are desired.

RIBES—Currant

Saxifragaceae

This comparatively small genus furnishes us not only currants and gooseberries of our gardens but also some of our most desirable ornamental shrubs. They are vigorous plants and of easy culture and most of them are valuable not only for their foliage but their fruit which is also very ornamental. They are used for grouping in shrubberies with other things.

R. alpina. (MOUNTAIN CURRANT.) 3 ft. May. Dense, upright racemes of golden yellow flowers. Fruit deep scarlet.

R. aureum. (MISSOURI CURRANT, GOLDEN CURRANT.) 4 to 6 ft. A native species with golden yellow flowers in showy racemes. These have a spicy fragrance. The fruit is usually black but occasionally yellow. The Crandall is a variety of this species which has been under propagation for some time and represents the type well.

R. floridum. (WILD BLACK CURRANT.) 4 ft. May. This well known native shrub is desirable for ornamental planting, and in Europe is frequently found in landscape work. The long racemes of yellowish white blossoms are followed by edible black fruit of good quality. The foliage assumes a deep bronzy purple color in autumn.

R. Gordonianum. (GORDON'S CURRANT.) 4 ft. May-June. A hybrid between *R. aureum* and *R. sanguineum*. A profuse blooming variety with crimson and yellow flowers in showy spikes.

R. sanguineum. (CRIMSON-FLOWERED CURRANT.) 3 ft. July. An American species with deep red flowers produced in great abundance.

ROBINI—(Rose Acacia)

Leguminosae

R. hispida. (ROSE ACACIA.) 4 ft. May-June. An excellent shrub with compound foliage and bearing clusters of rose colored flowers in May and June and often thruout the summer. The foliage is of a pleasing shade of light green and the bark is densely set with short hairs. The flowers are pea-shaped and without fragrance.

ROSA—Rose

Rosaceae

The generic name *Rosa*, comes from the Celtic word *Rhod*, red, the prevailing colors of the flowers. The rose has been one of the most, if not the most popular garden flower thruout all ages. The species, numbering upwards of one hundred, are found disseminated thruout Europe, Asia, Africa, and

Australia, while even Siberia, Iceland, Greenland, Kamtschatka are fairly represented. China, Persia and India also furnish some of the finest species.—Henderson.

In this catalog we shall limit the list to those varieties which are of particular value in general ornamental planting as distinguished from the so-called Hybrid Perpetual and Tea roses which are grown largely as garden plants for their blossoms. The latter class with its large list of varieties will be found described at length in our special Rose Catalog. Most of the roses here grouped together are therefore to be regarded in about the same light as the other ornamental flowering and foliage shrubs here described. Of course it is rather difficult to draw an arbitrary line between the two groups of roses as mentioned and also impossible to classify them as regards hardiness. However, most of the species here found require little or no protection.

R. alba. (MADAM PLANTIER.) This variety has come to represent its species. The bush is 4 to 5 ft. in height. Flowers pure white, full, double, with an occasional blush. Produced in great abundance in June. Foliage rather small. One of the best June roses for hedging and massing in groups.

R. blanda. 3 ft. May-June. Oval, pale green foliage and showy, large, rose-colored flowers, free from briars. Crimson fruits.

R. Carolina. (SMOKE ROSE.) 4 to 6 ft. June-September. A bushy rose with dull green foliage and showy pink flowers. From June to the close of September followed by showy crimson fruits.

R. centifolia. (CABBAGE ROSE.) A summer rose of large size and globular form. Rose color and very fragrant.

R. centifolia muscosa. (MOSS ROSE.) This has long been a favorite class on account of its beautiful, moss covered buds and characteristic foliage. They are comparatively hardy and of easy culture. The foliage is generally somewhat crimped and has seven leaflets. There are several distinct varieties.

R. Damascena hybrida. (THE HYBRID PERPETUAL ROSES.) This large class of blooming roses, probably the most important of all, is considered at length in our Rose Catalog. Its parent was the original Damask rose, a native of Syria, introduced into Europe in 1573. Several hundred distinct and very choice varieties are now in cultivation, representing every shade of coloring known to the rose. They are nearly all successful in the latitude of Minnesota with proper covering for winter.

R. Grevillei. (SEVEN SISTERS.) This variety is the best representative of its type. This is nearly related to *R. rubrifolia* and *R. setigera*. It is one of the strongest growers and a fine variety. The flowers are of light rose and borne in clusters. They change to almost white.

R. lucida. 2 to 3 ft. May-July. Shining green foliage and bright pink flowers. Reddish bark and bright red fruits. A very showy variety and one of the best for shrubberies.

R. lutea. (AUSTRIAN OR YELLOW BUSH ROSES.) This distinct class of roses is very desirable for the shrubbery.

var. **Harrison's Yellow.** 4 to 6 ft. June. Large, showy, golden yellow flowers, single or semi-double. A very free bloomer. In Minnesota and adjoining states this is the best known variety of its class.

var. **Persian Yellow.** (AUSTRIAN ROSE.) 4 to 6 ft. June. Flowers double and full. They are of about the same deep golden yellow shade as Harrison's Yellow and it is also a free bloomer. Should not be pruned close or it will not bloom.

R. multiflora Japonica. 5 to 8 ft. June. A fine species introduced from Japan more than a century ago but only recently brought to notice. A very free bloomer with great clusters of small white, single, sweetly fragrant flowers. The golden colored anthers make a fine contrast to the snowy white petals.

R. nithida. 2 ft. July. Shining foliage and showy brilliant red flowers succeeded by bright red fruit. The foliage assumes lively autumnal coloring.

R. polyantha. A Japanese species introduced about 1865. Distinguished from others by its panicle bloom. They are of slender growth with clean, thrifty foliage. Valuable for bedding purposes and as edgings.

R. rubiginosa. (SWEET BRIER OR EGLANTINE ROSE.) A stout, dense growing bush with glaucous foliage which gives off a most charming fragrance.

The flowers are rather small, pink and exceedingly fragrant. Showy orange crimson fruits. The Lord Penzance's hybrids are noteworthy variations of this type.

R. rubrifolia. (PRAIRIE ROSES.) These are all of vigorous climbing habit. The flowers are produced in large clusters late in the season when the other summer roses are gone. Desirable for covering walls, trellises, etc.

var. **Baltimore Belle.** Pale blush becoming nearly white. Compact blossoms.

var. **Gem of the Prairie.** Red, occasionally blotched with white. Large, flat flowers.

var. **Queen of the Prairies.** Bright, rosy red frequented with white stripes. Foliage large and quite deeply serrated.

R. rugosa. (RAMANUS ROSE.) This is one of the most valuable of all hardy roses. It forms vigorous bushes 4 to 6 ft. in height. They are perfectly hardy and succeed in almost any soil and often thrive under adverse conditions. They have elegant, broad, shining green foliage, peculiarly wrinkled and which gives a very rich effect. The large single flowers are produced freely thruout the summer. They are followed by immense fruits which are very attractive all thru late summer, autumn and early winter. During the latter part of the season, the bushes present both the orange and red colored fruits with the blossoms, and these against the rich green of the foliage make a beautiful combination of coloring; a very desirable hedge rose where a loose or open border is desired. There are several variations offering flowers in the shades of red, white and pink. Several very desirable hybrids are also offered. This species was first sent to this country by Commodore Perry in 1875.

R. setigera. (THE MICHIGAN OR PRAIRIE ROSE.) This is of rapid growth with large green foliage. The single flowers of a deep rose color are produced in masses thru late June and July. A good variety for covering banks and hillsides.

R. Wichuraiana. [Syn. *rosa luciae*.] (MEMORIAL ROSE.) This is a low trailing species, stems creeping on the earth almost as closely as the Ivy. Flowers are produced in profusion after the June roses are passed. They are of various shades, that of the original variety being pure white, the hybrids furnishing shades of pink and rose color. This is a distinct and valuable variety from Japan.

RUBUS—Bramble

Rosaceæ

These plants, closely related to the raspberry and blackberry, have certain ornamental value. They all produce choice foliage effects but vary greatly in habit of growth.

R. fruticosus laciniatus. (CUT-LEAVED BRAMBLE.) 4 to 5 ft. A curious, rapid growing, broad spreading bush with clusters of single white or pink flowers. The whole plant is very thorny. Foliage very distinct.

R. odoratus. (FLOWERING RASPBERRY.) 4 to 7 ft. Elegant, broad foliage and showy reddish purple flowers in a continuous succession. An excellent shrub for massing to form foliage effects.

R. xanthocarpus. (SIBERIAN BRAMBLE.) A rare, trailing bramble. An excellent plant for massing and valuable for planting steep banks as it spreads rapidly from the roots. Very vigorous, with the handsome foliage characteristic of this class. The fruit is large and of a beautiful golden yellow color. It is edible and of very good quality.

SAMBUCUS—Elder

Caprifoliaceæ

These are all showy, rapid growing shrubs with very ornamental foliage and also conspicuous for their flowers and fruits. They thrive in nearly all soils. No other class of shrubs are much more largely used for mass or group planting.

S. Canadensis. (COMMON AMERICAN ELDER.) 8 to 12 ft. A well known variety of distinct ornamental merit and forms a large spreading bush with handsome foliage. The white flowers in June and July are borne in flat cymes. They are followed by black fruits in August and September.

S. nigra. (EUROPEAN ELDER, BLACKBERRIED ELDER.) 6 to 10 ft. July. A native of Europe, with purplish black berries in September. From this, spring a number of the most ornamental varieties.

var. **aurea.** (GOLDEN ELDER.) 5 to 8 ft. Bright, golden yellow leaves, the color being distinct and permanent all summer. Of vigorous spreading habit. Very desirable for enlivening the color of any planting. One of the best golden foliaged shrubs.

var. **laciniata.** (CUT-LEAVED ELDER.) 5 to 9 ft. A valuable variety with elegantly divided leaves. Of drooping habit and one of the handsomest shrubs in cultivation.

S. racemosus. (RED-BERRIED ELDER) 6 to 10 ft. May. Showy cymes of white flowers, followed by dense clusters of vivid crimson fruits. Of somewhat heavier growth than *S. Canadensis*. A fine shrub everywhere.

SPIRÆA—Meadow Sweet

Rosaceæ

This important genus contains over fifty species and probably offers more valuable ornamental shrubs than any other. They are indispensable everywhere and for all purposes. They offer a period of bloom extending from May to the middle of August. Several of them are strikingly beautiful for their foliage. They are all elegantly shaped plants of low or medium growth and are of the easiest culture in all soils. (See also under Herbaceous Plants.)

S. arguta. 3 ft. May. Japan. Of light open habit, with small deep green foliage. When in bloom, each branch is completely covered with a wealth of minute, pure white flowers.

S. ærifolia. [Syn. *S. discolor* var. *ærifolia*.] (WHITE BEAM-LEAVED SPIRÆA.) 5 ft. July. A fine species native of Northwest America. Habit dense and bushy. Hawthorne-like foliage. Flowers in terminal panicles, greenish white or cream color.

S. Billardi. (BILLARD'S SPIRÆA.) 4 ft. July-August. A strong grower with dull green foliage and dense panicles of bright pink flowers. Also blooms occasionally during the fall.

S. Bumalda. 2 to 3 ft. July-August. A handsome species from Japan. Dwarf, but vigorous of habit; foliage narrow. Flowers rose color in compact corymbs. Borne in profusion in midsummer and autumn.

var. **Anthony Waterer.** This beautiful variety has largely superseded its parent. It produces flowers of a bright crimson and blooms so freely that it may be kept in flower thruout the summer till late fall by trimming away the dead blooms. The dense flower clusters are almost twice as broad as those of the other varieties of this species and of a much brighter, richer color. The foliage also is very handsome being variegated with creamy white or yellow and sometimes tinted with pink.

S. callosa. [Syn. *Spiræa Japonica*.] (FORTUNE'S SPIRÆA.) 3 to 4 ft. June. A compact shrub with upright branches and bluish green foliage. Bears panicles of rosy pink blossoms sometimes continuing all summer.

var. **alba.** [Syn. *S. Japonica* var. *alba*.] (FORTUNE'S DWARF WHITE SPIRÆA.) 2 ft. Blooms all summer. A pure white form.

var. **rosea.** [Syn. *S. Japonica* var. *rosea*.] (FORTUNE'S PINK SPIRÆA.) 3 ft. June-July. Rosy pink flowers in loose corymbs.

var. **superba.** [Syn. *S. Japonica* var. *superba*.] (FORTUNE'S SUPERB SPIRÆA) 2 to 3 ft. All summer. Showy pink and white flowers.

S. carpinæfolia. 4 to 5 ft. June July. A handsome species somewhat resembling *Billardi* in foliage. The white flowers are borne in midsummer in dense terminal clusters.

S. cratægifolia. (HAWTHORNE-LEAVED SPIRÆA.) 3 ft. June. A handsome variety with dense clusters of pure white flowers in great profusion.

S. crispifolia. [Syn. *bullata*.] 1 ft. All summer. A choice, very dwarf variety with dark foliage and deep red flowers in terminal heads. Excellent for borders with larger varieties.

S. Douglassii. 3 ft. August. This variety bears immense terminal spikes of deep rose colored flowers. One of the best.

S. opulifolia. (NINE BARK.) 5 to 8 ft. June. One of the most vigorous growers. The branches are upright, tho drooping when loaded with white flowers in June. Foliage light green.

var. **aurea.** (GOLDEN SPIREA OR GOLDEN-LEAVED NINE BARK.) Similar to the above in size and habit except that the foliage is of a bright golden color and finely shaded. This is one of the finest golden-leaved shrubs and a very desirable variety for the contrast it offers.

S. prunifolia. fl. pl. (BRIDAL WREATH.) 5 to 6 ft. May. Beautiful double pure white flowers which are borne along the entire length of the twigs. The branches are upright and the dark green shining foliage colors up well in the fall. One of the showiest of the Spireas.

S. Reevesii. [Syn. *S. lanceolata*.] (LANCE-LEAVED SPIREA.) 4 ft. June. A charming shrub with narrow pointed leaves and large round clusters of pure white flowers. The bloom covers the whole plant and makes it very effective.

S. Regaliana. 5 to 6 ft. June-July. A variety of medium growth and good habit. The bright pink flowers are borne in flat compact clusters. A desirable addition.

S. rotundifolia. [Syn. *S. bracteata*.] 4 to 5 ft. June. A rapid grower with upright spreading branches and dark green rounded leaves which are held on well into the fall. The pure white flowers are very showy. A distinct variety.

S. salicifolia. (WILLOW-LEAVED SPIREA.) 4 ft. July-August. Long narrow willow-like leaves. Flowers rose colored. A distinct and very desirable variety.

S. sorbifolia. (ASH-LEAVED SPIREA.) 5 ft. July. A vigorous growing shrub with large handsome foliage resembling that of a Mountain Ash. The white flowers are borne in elegant long spikes. The foliage appears very early in the spring. A desirable shrub in every way.

S. Thunbergii. (THUNBERG'S SPIREA.) 3 to 4 ft. May. One of the finest spring blooming, small shrubs. The flowers are pure white and are borne along the entire length of the branches, bending them down in graceful curves. Foliage narrow and willow-like and turns to pleasing shades of orange scarlet in autumn.

S. Van Houttei. (VAN HOUTTE'S SPIREA.) 4 to 5 ft. June. Perhaps the most popular of all the Spireas and has been the most planted. It is of upright tho pendulous growth with a foliage of rich green which assumes pleasing autumnal coloring. Very graceful and ornamental even when out of bloom. When covered with its dense clusters of pure white flowers, the branches are weighted down nearly to the ground and the whole bush presents a mass of the most beautiful rich white. A beautiful shrub either for single lawn specimen or in groups.

STAPHYLEA—Bladder Nut

Sapindaceæ

S. trifoliata. (AMERICAN BLADDER NUT.) 5 ft. May-June. This species is indigenous to the United States and the most desirable of its class. Adapted to ordinary soils and valuable in some locations as an early bloomer. Forms a handsome shrub with terminal panicles of white flowers.

STEPHANANDRA

Rosaceæ

S. flexuosa. 4 ft. July. A desirable ornamental shrub introduced from Japan in 1870. It is of graceful spreading growth with drooping branches and elegant foliage. The pure white flowers are borne in dense spikes on long branches. Foliage assumes a purplish coloring in autumn.

SYMPHORICARPUS—Snowberry or Waxberry

Caprifoliaceæ

This native genus is coming more and more into use for ornamental purposes. They are very free growers and their hardiness and adaptability to all soils makes them valuable.

S. racemosus. (SNOWBERRY.) 4 ft. July-August. A slender branch-erect growing shrub with rose colored flowers in loose racemes. These are followed by showy pure white berries which remain on well into the winter and which constitute the most conspicuous and valuable features of the variety. An excellent sort for planting in densely shaded places.

S. vulgaris. (CORAL BERRY, INDIAN CURRANT.) 4 ft. July. Resembles *S. racemosus* in growth but is little more compact. The flowers are borne in dense terminal spikes. They are followed in late summer by dark purplish red berries, smaller than the fruit of *S. racemosus* and hanging in closer clusters. Its persistent foliage makes it well adapted for shady places and like the preceding variety, it is especially desirable for growing under trees where sod is not easily maintained.

SYRINGA—Lilac

Oleaceæ

As explained under the head of *Philadelphus*, this generic name should be used only in connection with the Lilac. In the past it has been used as a common name for some of the varieties of *Philadelphus* but there is no connection whatever between them as they belong to entirely different botanical orders. No other shrub as a class is perhaps so well known as the Lilacs. The old common purple and white lilacs have been planted in gardens for hundreds of years. In fact they have been so common as to have fallen into disuse. However, during the last fifteen or twenty years, new and improved varieties have been brought forth which are again placing the lilacs in the front rank as an ornamental shrub. A careful selection will offer a greatly extended season of blooming. The English name of Lilac or *Lilag* is derived from the Persian, from which country this shrub originally came.

S. Japonica. (JAPAN TREE LILAC.) 15 to 18 ft. Late June. A distinct variety forming a pyramidal and upright shrub or small tree. It has broad, handsome, dark green foliage and bears large heads of creamy white flowers very late in the season.

S. Josikæa. (HUNGARIAN LILAC.) 6 to 8 ft. May. From Transylvania. A fine distinct species of vigorous upright growth with dark, shining leaves and violet purple flowers which appear very late, generally after the other Lilacs are thru blooming.

S. ligustrina var. **Pekinensis.** [var. *Amurensis*.] (CHINESE LILAC.) 8 to 10 ft. June. One of the later introductions. Form a handsome shrub with slender graceful branches and dark green foliage which holds on late. The flowers are pure white in dense trusses and very fragrant. Its pendulous habit of growth is a distinct feature.

S. Persica. (PERSIAN LILAC.) 5 to 6 ft. May-June. A distinct species of rather smaller growth than *S. vulgaris*. The branches are slender and straight with smaller and narrower leaves. The bright purple flowers are borne in loose panicles. A very graceful form.

var. **alba.** A white form of the above.

S. Rothomagensis var. **rubra.** [Syn. *S. Chinensis*.] (ROUEN LILAC.) 5 ft. May. A distinct hybrid variety with reddish flowers which are borne in large open panicles and very profuse. It is of open habit of growth, with smooth, medium sized foliage.

S. Siberica alba. (SIBERIAN WHITE LILAC.) A vigorous growing variety with small and narrow foliage. The flowers are white with a bluish tint and quite fragrant. It is very free flowering and one of the best of the lilacs.

S. villosa. 6 ft. May. A species from Japan. Large branching panicles. Flowers light purple in bud and white when open. Fragrant. Foliage resembles that of the White Fringe. A late bloomer.

var. **Emodi**. (MT. EMODUS LILAC.) 6 ft. May. A choice form from the Himalayas with large panicles of white flowers.

S. vulgaris. (COMMON PURPLE LILAC.) 8 to 10 ft. May. This is the oldest and best known type of the Lilac. From it have sprung most of the hybrids and seedling varieties which have made the Lilac as a class one of our most popular modern shrubs. The old type is still planted in many places on account of its fragrant clusters of flowers but many of the newer varieties are so much better in every way that it is being largely superceded by them. There are close on to a hundred of these new varieties, but we shall confine our list to those which have been the longest tested or are of the greatest value.

var. **alba**. (COMMON WHITE LILAC.) The well known white flowering form of the above.

var. **Albert the Good**. A vigorous tho not tall shrub with large spikes of reddish purple flowers.

var. **Belle de Nancy**. Very large, elegant panicles. The flowers are a brilliant satiny rose, shaded to white toward center.

var. **Chas. X**. A strong growing variety with large shining leaves. Loose trusses of reddish purple flowers. One of the best.

var. **Colmariensis**. Very large, pale blue flowers and fine glossy foliage. Distinct and fine.

var. **Edouard Andre**. Large spikes of clear rose flowers of irregular form, buds darker. An early flowering sort.

var. **Frau Dammann**. One of the best single sorts of recent introduction. Immense trusses of pure white, medium sized flowers.

var. **Gloire de Moulins**. Long, rosy lilac panicles. Individual flowers very large and fragrant.

var. **Jean Bart**. Panicles large and compact. Flowers rosy carmine in color.

var. **Lamarck**. Very large panicles. Individual flowers large. Very double, rosy lilac.

var. **Languis**. A single Lilac which blossoms quite late. Panicles large. Individual flowers medium, rosy lilac, a distinct shade.

var. **La Tour d'Auvergne**. Flowers double, very large. Lilac purple.

var. **Lovaniensis**. Flowers single, silvery pink. A distinct shade. They are borne in erect panicles and show to good advantage.

var. **Le Gaulois**. Panicles very large and compact. Flowers double. deep peach color.

var. **Lemoinei**. A very double variety with ashy lilac flowers. A distinct variety and one of the best.

var. **Ludwig Spæth**. Panicles long. Individual flowers large, single, dark purplish red. A distinct and superb variety. The finest of its color.

var. **Madam Abel Chatenay**. Large panicles of double white flowers. A very fine variety.

var. **Michæl Buchner**. A dwarf grower with very large, erect panicles of very double, pale lilac flowers. Quite distinct.

var. **Pres. Grevy**. A very fine, double variety with large panicles of beautiful blue flowers.

var. **Princess Alexandra**. A variety of pure white flowers. Panicles medium to large. One of the finest of its color.

var. **Rubra de Marley**. Single. Rich, rosy purple.

var. **Verschaffelti**. A single variety and very distinct. Dark red in bud and lilac when open.

TAMARIX—Tamarisk

Tamaricaceæ

These are fine ornamental shrubs. The small leaves are somewhat like the Juniper but not evergreen. The delicate small flowers are borne in spikes. They are much used in the East for seashore planting and are invaluable for this purpose. They thrive on the edge of sandy banks near either fresh or salt water.

T. Africana. [Syn. *parviflora*.] 6 ft. May-June. A strong growing shrub with brown bark and slender branches. The bright pink flowers are borne in slender racemes on last years branches.

T. Amurensis. 4 to 6 ft. July. Introduced from Russia by Prof. Budd. Altho coming direct from Russia, it does not seem to be harder than the other varieties. The growth is slender and graceful with silvery foliage. The small spikes of pink flowers are borne in long panicles on the young growth.

T. Gallica. 6 to 8 ft. June-July. Fine, feathery foliage on long slender branches. Flowers pink and small but very numerous and give a showy appearance to the plant.

var. **Indica.** Of upright and more slender growth than *T. Gallica*. The foliage is dull green. The pink flowers are borne in slender racemes on the new wood.

VIBURNUM—Arrow=root, Arrow=wood

Caprifoliaceæ

This genus furnished us some of our most ornamental shrubs and has long been in use. They furnish a great variety in size and in foliage as well as in flower and fruit. Some of them are very fine as single specimens but most of them are particularly valuable in the shrubbery group. A group or collection from this genus alone will make a beautiful effect as well as an interesting combination.

V. acerfolium. (DOCKMACKIE.) 5 ft. May-June. A shrub with slender upright branches and broad, light green, maple-like foliage. The white flowers are borne in flat cymes. The fruit is crimson, turning to purplish black and the foliage turns to a dark rich purple.

V. cassinoides. (WHITE ROD.) 5 to 8 ft. June. An upright shrub with oblong leaves of dull green. Flowers yellowish white followed by fruit which changes from green to red and black.

V. dentatum. (ARROW WOOD.) 6 ft. June. Showy, glossy green foliage. White flowers in flat cymes, followed by deep, steel blue berries in September.

V. dilatatum. 6 to 9 ft. May-June. An upright grower with broad foliage and pure white flowers in short cymes.

V. lantana. (WAYFARING TREE.) 6 ft. May-June. An upright grower, with broad, wrinkled foliage and white flowers in broad cymes. These are followed by large clusters of bright red fruits which change to black and are very showy. Berries do not color all at the same time which adds to their effectiveness.

var. **rugosum.** (ROUGH-LEAVED VIBURNUM.) Has larger and rougher leaves than *V. lantana* and terminal cymes of white flowers. Very ornamental in foliage and fruit.

V. Lentago. (SHEEPBERRY.) 5 to 8 ft. A strong growing shrub with slender branches and light green, glossy foliage. The flowers in May and June are creamy white and very fragrant. They are followed by fruits of a bluish black color.

V. molle. (SOFT-LEAVED VIBURNUM) 5 to 6 ft. June. A rare, native species similar to *V. dentatum*, but the foliage and fruit are larger and it blooms about twenty days later.

V. nudum. (WHITE ROD.) 6 ft. May-June. Handsome, glossy, lanceolate foliage. White flowers followed by black berries in large clusters.

V. opulus. (HIGH BUSH CRANBERRY.) 7 to 10 ft. June. This well known native shrub is one of our most desirable ornamental varieties. It has handsome broad foliage of a lustrous, dark green color, changing later to rich coppery tints. The large flat cymes of white flowers are very ornamental but the shrub is particularly conspicuous later in the fall and early winter for its brilliant scarlet fruit which hangs in large pendulous clusters and remains on until spring. By all odds one of our most desirable shrubs.

var. **nana.** 2 ft. A dwarf, bushy shrub with good foliage and valuable in grouping. It does not blossom.

var. **sterilis**. (COMMON SNOWBALL OR GUELDER ROSE.) 6 to 8 ft. The old-fashioned snowball and always popular. Its large, globular clusters of pure white flowers in May and June have made it a conspicuous shrub in the gardens of many generations.

V. plicatum. (JAPANESE SNOWBALL.) 4 ft. May. A very ornamental species from China and Japan with handsome olive foliage. The flowers are larger and of a purer white than the common snowball. They are also borne in denser heads and show beautifully against the foliage.

var. **prunifolium**. (BLACK HAW.) 6 to 9 ft. May-June. A vigorous growing shrub with dark green, shining foliage. The white flowers are borne in broad cymes. They are followed by oval fruits of a dark blue black color.

var. **tomentosum**. (SINGLE JAPANESE SNOWBALL.) This type forms a broad bush with brown branches and beautifully ribbed foliage, green above and bronzy purple beneath. The pure white flowers in flat cymes are followed by scarlet berries.

V. Sieboldi. 5 to 8 ft. A vigorous grower with dark green, shining foliage bearing panicles of white flowers in May and June. The pink fruit which follows changes to a bluish black when ripe.

WEIGELA

Caprifoliaceæ

Named in honor of C. E. Weigel, a botanical writer. These have generally been classed in catalogs under the head of *Diervilla*, but they do not properly belong to that class, as they constitute a genus by themselves. They were introduced from China and Japan in 1843 by Mr. Fortune to whom we are indebted for many rare and beautiful plants. They are very ornamental and popular where they are successful. They are profuse bloomers and admirable as single specimens or in groups. They flower after the Lilacs.

W. amabilis. [Syn. *florida* var. *amabilis* or *splendens*.] A pink variety and a profuse bloomer. Flowers deep rose.

W. candida. (WHITE WEIGELA.) 6 ft. June and all summer. Of vigorous habit. The flowers are pure white and produced in great profusion. They continue to bloom thru the summer and even until autumn.

W. Kosteriana. A dwarf form. The foliage is bordered with yellow. The flowers are deep rose color.

W. floribunda. (FREE FLOWERING WEIGELA.) 5 ft. June. A fine variety with dark red flowers. A very profuse bloomer.

W. Grœnewegeni. A strong grower and an abundant bloomer. Flowers red outside and white within, and striped with yellowish red.

W. hybrida var. **Desboisii**. A good grower and an abundant bloomer. Flowers deep rose.

var. **Eva Rathke**. The flowers of this hybrid are a dark carmine red.

W. Japonica. [Syn. *hortensis* var. *floribunda*.] Of slower growth than the type but a profuse bloomer. Flowers are a rosy carmine.

W. rosea. [Syn. *W. florida*.] (ROSE-FLOWERED WEIGELA.) 5 ft. May-June. An elegant shrub with fine rose colored flowers. It is erect in habit and with good foliage. The best known and perhaps the most popular of the group.

var. **nana aurea variegata**. A dwarf variety with pale, rose colored flowers and foliage marked with yellow.

XANTHOCERAS

Sapindaceæ

X. sorbifolia. (CHINESE CHESTNUT.) 6 ft. May-June. Pinnate foliage, similar to that of the Mt. Ash. The flowers are borne in large, showy clusters. Pure white deeply tinged with brown or red at the center. Very free bloomer.

XANTHORRHIZA—Yellow Root

Ranunculaceæ

X. apiifolia. 2 ft. May. Showy, glossy green, pinnate foliage and dense clusters of small, deep purple flowers. Valuable on account of its foliage and low habit.

CLIMBING AND TRAILING SHRUBS OR HARDY VINES

IN horticultural parlance, a vine is a weak-stemmed, more or less tall-growing plant that needs to have the support of some rigid object to hold it above the earth. Many plants that are grown for their economic uses are vines, altho they are not ordinarily so classified in horticultural writing; for example, some of the beans, the hop, the sweet potato plant and the melon. When vines are mentioned in horticultural writings, plants that are used for ornament are commonly understood. Vines belong to many natural orders and represent very many types of plant beauty. The larger part of them are useful in horticultural operations as screens for covering unsightly objects or for shading verandas or summer houses.

Vines are really climbing plants. They get up in the world in three general ways: by scrambling or clambering over other plants without any special devices for aiding them in the ascent; by twining about the support; by ascending with the aid of special organs, as roots or tendrils. The larger number of cultivated climbing plants belong to the last two categories. However, there are many useful climbers among the scramblers. These plants usually have to be tied to a support unless they are allowed to ramble at will over some expanded surface, as the top of a bush or a broad stone wall. (Cyclopedia of American Horticulture—Bailey.)

It should be borne in mind that there are a large number of plants which belong to this classification, and that many of them are woody or shrubby, others herbaceous, and still many others belong to the annual class which are grown from seed. In this catalog, nearly all the species listed are those belonging to the shrubby group, being able to stand the cold of ordinary winters. Many of them, of course, such as the *Ampelopsis quinquefolia*, are natives of Minnesota which fact itself insures their absolute hardiness. Some of the Clematis and other climbers of that class belong more to the herbaceous section in this climate. The annual climbers which are grown from seed will be found listed in our seed catalog.

Approximate blossoming season is represented by the months given in the description of those varieties, prominent for their flowers.

ACTINIDIA

Ternstroemiaceae

A. arguta. June-July. A climbing plant from Japan. The flowers are white with a purple center, and sometimes cover the whole vine. The fruit is round, greenish yellow, with a fig-like flavor. Handsome foliage and a very desirable climber.

AKEBIA

Berberidaceae

A. quinata. May. Japan. A singular climbing shrub, with fine, clover-like foliage. Deep purple flowers in clusters. Requires sunny position and well drained soil. It rarely produces fruit in this country. It has a large oblong berry with numerous seeds, and in Japan is eaten.

AMPELOPSIS—Woodbine

Vitaceae

This genus is allied to the *vitis* or grape, as is seen from its foliage and general habit. It is, however, very easily distinguished in all of these features. It furnishes us some of our most vigorous and most desirable climbers.

A. heterophylla var. **elegans.** [Syn. *Vitis heterophylla variegata.*] This is a native Japan variety. It is valuable on account of its very ornamental foliage. The leaves are of shining green, blotched and striped with white, flushed pink when young. Light blue berries in clusters.

A. quinquefolia. (VIRGINIA CREEPER OR COMMON WOODBINE.) Flowers inconspicuous. The splendid Ivy found in our Northern woods which is well known for the beautiful autumnal coloring it furnishes everywhere. It is perfectly hardy and endures any amount of abuse, needing no protection whatever. In autumn it presents showy clusters of deep blue berries which are held on into the winter long after the leaves have fallen.

var. **Engelmanii.** (ENGELMAN'S WOODBINE.) A type of *quinquefolia* which has long been desired. It has shorter joints and very much smaller and thicker foliage. It also is better equipped with tendrils by which it will climb walls of stone or brick as closely as the *tricuspidata* or *Veitchii*. This variety has proved itself perfectly hardy in Minnesota, and we have no doubt but that it will occupy the same place in this latitude that the Boston Ivy does in the East.

var. **murorum.** [Syn. *A. hederaceae* var. *murorum*, also *A. muralis.*] Another type, having similar characteristics with the *Engelmanii*. It is, however, longer in joint and the leaves are also somewhat larger. Its tendrils are numerous and well adapted for vigorous climbing. This is a much more desirable type than the old *quinquefolia* and should take its place.

A. tricuspidata. [Syn. *A. Veitchii.*] (JAPANESE IVY, BOSTON IVY.) The well known climber of the Eastern States. The leaves are smaller than those of *A. quinquefolia*, and overlap one another. It grows rapidly and is very hardy. It is one of the finest climbers for all purposes. It also assumes rich autumn coloring. The flowers are inconspicuous but the fruit is borne in dense clusters of dark blue berries.

ARISTOLOCHIA

Aristolochiaceae

A. Sipo. [Syn. *A. macrophylla.*] (BIRTHWORT, DUTCHMAN'S PIPE.) June. Derives its name from the peculiar shape of its flowers which resemble old fashioned Dutch Pipes. It is one of the most rapid climbers in use, and very desirable for shade or screen purposes anywhere. Does best on the north side of houses where the full force of the noon day sun does not strike it as its large tropical foliage is damaged by too much heat. This is an extremely desirable feature, however, as it fills locations where most other vines are not a success. It succeeds in any good garden loam, and it is not unusual for well established plants to make a growth of 15 to 20 ft. in one season.

BIGNONIA (See Tecoma)

CELASTRUS—Bittersweet

Celastraceæ

C. scandens. (CLIMBING BITTERSWEET, FALSE BITTERSWEET.) A rapid growing, climbing shrub, with ornamental, light green foliage. The yellow flowers in June are followed by bright yellow and crimson fruits in the autumn. A very desirable plant for covering trees, rocks, rough walls and trellis work. It is also found to be an excellent grower on steep banks as it increases by suckers and thus helps to prevent washing. It is a vigorous grower, usually attaining 20 to 30 ft. in height.

CLEMATIS—Virgin's Bower

Ranunculaceæ

An extensive genus of handsome, climbing and trailing shrubs, many of which are native of North America, and others of Europe, Japan and Australia. With us the genus derives its name from the well known Virgin's Bower, *C. Virginiana*, found in our northern woods. The large flowering varieties were mostly brought from Japan by Siebold and Fortune. Of these, the Jackmani is one of the best known varieties. Most of them are propagated by grafting as they hybridize very easily. In fact, the different types of Clematis are so nearly allied and hybridize so easily that there is an unavoidable confusion in the nomenclature of varieties, especially in the *lanuginosa* and *cærulea* types. In many cases hybrids of these and of other types have themselves been crossed, and it is hard to tell just where some of the varieties belong. In our classification we have followed the Cyclopedia of American Horticulture.

C. cærulea. This species is taller and more slender, with leaflets smaller and narrower than those of *C. lanuginosa*. The flowers of this type are rather narrow, of delicate lilac, with purple stamens. It is almost as prolific as *C. lanuginosa* in the production of hybrids, and is the most likely of all to produce double flowered forms. Following are some of the principal varieties produced from this type.

Countess of Lovelace. Flowers blue-violet; sepals much imbricated.

Helena. Flowers pure white, with yellow stamens.

Lord Lanesborough. Sepals bluish lilac, each with a metallic purple bar.

Louis Van Houtte. Semi double, rosy white.

Mrs. James Baker. Sepals nearly white, ribbed with dark carmine.

Stella. Sepals deep mauve, with a red bar down the center of each.

C. crispa. A slender climber, attaining only a height of 3 to 4 ft. Leaves are very thin. The flowers are purple, varying to whitish, bell-shaped, one to two inches long. Rather fragrant. Blooms from June to September.

C. Flammula. (EUROPEAN SWEET CLEMATIS.) July-October. A slender but vigorous climber, reaching 10 to 15 ft. Dark green leaves remaining fresh until late in the season. Flowers small, numerous, borne in axillary and terminal panicles, with white stamens. Fruit bears white plumes, similar to *C. Virginiana*. Blossoms August to October. Must have sunny exposure.

C. lanuginosa. This species thru its hybrids furnishes us many of the larger flowered varieties of which *Jackmani*, *Henryi* are two of the best known. They are not tall growers but are chiefly desirable on account of their wealth of bloom. The flowers of most of them are of immense size, often 5 to 6 in. in diameter. The following are some of the principal varieties produced in this type. Bloom mostly June-August.

Gem. Flowers grayish blue or sky blue.

Henryi. A robust plant and a free bloomer. Flowers creamy white. A hybrid of *C. lanuginosa*, and *C. florida*, but most resembling the former.

Jackmani. Flowers are large, intense violet purple. Remarkable for its velvety richness. It is a free grower and an abundant bloomer. The sepals have a ribbed bar down the center; broad central tuft of pale green stamens.

Jeanne d'Arc. Sepals grayish white with three blue bars down the center of each.

Lady Caroline Nevill. Sepals nearly white, with mauve colored stripe down the center of each.

La France. Deep, cobalt-blue, with wavy edges.

Lawsoniana. Rose purple, marked with dark red veins.

Madam Edward Andre. Flowers a beautiful, bright, velvety red.

Madam Van Houtte. Late blooming; sepals pale blue, becoming white.

Star of India. Flowers large, purple, barred with red.

The President. Rich, violet-blue flowers.

C. orientalis. [Syn. *C. graveolens*.] A rapid climber, reaching 12 to 15 ft. Leaves thin, glaucous, shining. The flowers are single, yellow, tinted with green. Blooms August and September.

C. paniculata. July-September. One of the most vigorous, beautiful and most desirable of all the Clematis climbers. It is a very rapid climber, and desirable wherever a strong and rapid growing vine is needed, on walls, verandas, fences, etc. In late summer it produces dense sheets of medium size, pure white flowers, of the most pleasing fragrance. This variety was introduced from Japan and has become one of the most popular vines in America. It is one of the hardiest of foreign Clematises, and in our section does not require protection except in the most exposed locations.

C. Viora var. **coccinea.** All summer. A desirable variety recently introduced from Texas. It has beautiful flowers and is being much used. Has been crossed with other hardier Clematises and desirable varieties, such as the Countess of Onslow, Countess of York and Duchess of Albany have resulted.

C. Virginiana. (VIRGIN'S BOWER, AMERICAN WHITE CLEMATIS.) August. Always a popular, hardy, climbing shrub. It is a native of the Northwest and succeeds everywhere. Grows to a height of 20 ft., and sometimes more. In August produces an immense profusion of white, feathery flowers.

C. Viticella. This is one of the oldest and best types of the Clematis that have been introduced into this country. It forms one of the leading groups of the garden Clematises, and is one of the parents of the Jackmani type of hybrids. It bears a profusion of medium sized flowers of a bright, wine-red color. June-August. Following are some of the best hybrids.

Kermesinus. Flowers bright, wine-red color, purple being absent.

Lady Bovill. Flowers cup-form; sepals grayish blue, stamens light brown.

Modeste. Large, bright blue; bars deeper color.

Othello. Flowers of medium size, deep velvety purple.

EUONYMOUS

Celastraceae

This genus is best known by its upright varieties, which are found described under that head. The following species, however, is a very desirable trailing shrub in many locations.

E. radicans. A low, procumbent shrub, with often trailing and rooting or climbing branches. Climbs sometimes to a height of 20 ft. Has good foliage, a dull green above, with whitish veins. The fruit is very similar to that of the upright shrub tho of lighter color. It is a desirable variety for covering rocky banks or rough walls.

var. **variegata.** A form of the above with foliage variegated, creamy white and light rose. In autumn it turns to a shade of purplish pink.

HEDERA—Ivy

Araliaceae

H. Helix. (ENGLISH IVY.) This climbing vine is so well known as to need little description. Wherever it is hardy, it is a very satisfactory climber, especially where given a northern exposure. The leaves are a dark green above and a pale or yellowish green beneath. The fruit is black, tho sometimes yellow. There are upwards of sixty varieties of this cultivated in European gardens.

HYDRANGEA

Saxifragaceæ

H. scandens. (CLIMBING HYDRANGEA.) A vine from Japan, with shining green leaves and white flowers in loose clusters in June. It must have something to cling to before it will run, being like the common Ivy in this respect. It is rather a rare plant and not the most vigorous in this country.

LONICERA—Honeysuckle

Caprifoliaceæ

This genus is named after Adam Lonicer or Lonitzer, a German naturalist of the sixteenth century. It numbers many of our upright shrubs which will be found in that section of this catalog. The climbers here listed are well adapted for covering walls, arbors and other trellis work. They have handsome, and many of them sweet scented flowers. They are not the highest climbers but are very desirable, nevertheless, and work in well in many places where higher growers would not do so well.

L. brachypoda. According to Bailey's Cyclopaedia of American Horticulture, the varieties formerly cataloged under this head belong to *L. Japonica* which see.

L. flava. This is a very rare variety, with bright orange-yellow, fragrant flowers. It is not much found in cultivation, and as a result has been confused with *L. Sullivani* which see. April-May.

L. Japonica. [Syn. *L. brachypoda.*] (CHINESE EVERGREEN HONEYSUCKLE.) Broad dense foliage of purplish green color. The young shoots are purple. The leaves and stems are quite hairy. The flowers are yellow and fragrant. Foliage is almost evergreen.

var. aureo-reticulata. (GOLDEN VARIEGATED HONEYSUCKLE.) July. A handsome and very desirable variety. The foliage is netted or variegated with yellow. This makes it unique and is a very noticeable feature of the variety. It is also semi evergreen. Flowers June-August.

var. Chinensis. [Syn. *L. Sinensis.*] This is distinguished from the type by its very dark, purplish green foliage. It is also nearly evergreen and bears fragrant yellow flowers.

var. flexuosa. June-July. Another medium size climber. It follows the type very closely. Flowers white changing to yellow, often purplish outside.

var. Halliana. (HALL'S EVERGREEN HONEYSUCKLE.) One of the best and a free bloomer. Has oval, semi evergreen foliage and fragrant yellow and cream colored flowers in constant succession. Excellent for covering trellises, rocks, dry banks, etc.

L. Periclymenum var. **Bellgica.** [Syn. *L. Semperflorens.*] (BELGIAN OR DUTCH MONTHLY FRAGRANT HONEYSUCKLE.) All summer. Flowers bright red outside, shading to yellowish white inside. Borne in a dense head and are very fragrant.

L. sempervirens. (TRUMPET HONEYSUCKLE.) One of the best climbers of the class. This and its varieties are probably the most planted and they are generally the ones referred to when the broad term, Climbing Honeysuckle is used. It is a vigorous grower, with glabrous foliage. Flowers trumpet shaped, 1½ to 2 in. in length; in color they are scarlet or orange scarlet. All summer.

var. flava. A type with yellow flowers. Should not be confused with *L. flava.*

var. fuchsoides. A showy and free blooming variety. It has finer foliage than the type, and bears a succession of large bunches of bright scarlet flowers, followed by scarlet berries.

L. Sullivani. (YELLOW HONEYSUCKLE OR MINNESOTA HONEYSUCKLE.) July. A very hardy, trailing shrub, attaining a height of 4 to 5 ft. Its growth is rare and peculiar. The broad and glaucous foliage encircles the smaller twigs. The flowers are yellow and followed by large bunches of showy, orange scarlet fruit, which appear after the blossoms in July and remain on the branches well thru the season. With a little effort, it may also be trained into shrub form.

LYCIUM—Chinese Matrimony Vine

Solanaceæ

L. Chinense. May. This is a medium sized creeper or trailer, attaining a maximum height of 12 ft. The foliage is of a grayish green. The flowers which appear from June to September vary thru shades of pink to purple. The fruit which follows is of a deep crimson and very showy. It is borne abundantly along the entire length of the branchlets. It is especially attractive in the fall when it is thus loaded with its bright fruits which contrast well amid the green foliage. The foliage remains fresh until severe frosts. A very desirable climber for fences and trellis work.

MENISPERMUM

Menispermaceæ

M. Canadense. (MOON SEED.) June-July. A rapid climbing vine with alternate leaves and flowers in loose clusters at the base of the foliage. They are pure white and followed by showy clusters of black fruit. The fruit is prettily covered with bloom. The foliage is of a handsome, dark green color. Grows to a height of 10 ft. or more. Delights in a rich soil.

PERIPLOCA—Silk Vine

Asclepidaceæ

P. Græca. July. A native of southern Europe and a rapid, beautiful climber where it will succeed. In locations where it is hardy, it will twine around a tree or other support to a height of 30 or 40 ft. The foliage is lanceolate, smooth, glossy green and showy. The flowers are purplish brown, borne in axillary clusters; not conspicuous.

ROSA—Rose

Rosaceæ

We deem it best to list the climbing and creeping roses in our Special Rose Catalog. As there are so many of them, they form a class by themselves. A few of them will be found in this catalog under the section headed Ornamental Deciduous Shrubs. These latter are the more hardy varieties, and number some of the most interesting and valuable climbing and trailing species, including *R. Grevillei*, *R. multiflora*, *R. rubrifolia*, *R. setigera* and *R. Wichuraina*.

SOLANUM—Nightshade

Solanaceæ

S. dulcamara. (GERMAN BITTERSWEET.) A fine scrambling vine of the Old World that has been naturalized in America. It is a rapid grower, of clinging habit, and with beautiful, dark green foliage. During the summer it is covered with violet-purple blossoms and bright green fruits which turn to a brilliant scarlet. The vine is thus covered with the flowers, the green fruit and the scarlet, thruout the summer. The fruit also remains on long after the leaves have fallen. It is interesting to know that this belongs to the same family as the potato, egg plant, etc.

TECOMA—Trumpet Vine

Bignoneæ

T. radicans. [Syn. *Bignonia radicans*.] (TRUMPET VINE.) This species has a unique method of climbing. It is done by the aid of aerial rootlets. These grow from the joints of the stem and fasten on to objects same as the suckers of other vines. Its foliage is a deep rich green and the flowers are a dark rich crimson. Very fine for rough walls or rocky slopes. July-September.

VITIS—Grape

Vitaceæ

The grape, altho best known as a fruiting vine, still furnishes many desirable ornamental climbers. As some of them are indigenous in the latitude of Minnesota, they offer choice varieties for use in the Northwest. They are very fine for covering arbors, porches, or on trees. They do not require a great amount of training but must be furnished some support.

V. æstivalis. (SUMMER, BUNCH OR PIGEON GRAPE.) A strong, tall growing vine, with large, handsome foliage. The characteristic feature with this variety is the rusty or red brown fuzz which grows on the veins and the under side of the leaves. The flowers are inconspicuous and followed by black, glaucous berries with a tough skin and varying in quality.

V. cordifolia. (TRUE FROST GRAPE, CHICKEN RACCOON OR WINTER GRAPE.) One of the most vigorous of American vines. Climbs to the top of the tallest trees where it grows successfully. The leaves are medium sized, the upper surface being glossy, the lower a bright green. The berries are numerous and small, and borne in a loose bunch. They have a thick skin, with little pulp. Edible after frosts.

V. heterophylla. (See *Ampelopsis heterophylla*.)

V. Labruska. (FOX GRAPE, SKUNK GRAPE.) This species is the parent of the greater part of our American cultivated grapes. It is indigenous in the Atlantic States. It is a strong grower, climbing high on thickets and trees. The leaves are large, thick and strongly veined. They are a dull green on top; the lower surface is densely covered with a tawny white, dun colored or red-brown tomentum. The berries are borne in small bunches and are quite large. In color they range from purple black to red-brown and amber-green. All have a characteristic musky flavor.

V. vulpina. [Syn. *V. riparia*.] (RIVER BANK OR FROST GRAPE.) A vigorous tall climbing species, with bright green foliage. The leaves are thin, medium to large, the edges deeply toothed. The flowers are sweet scented and followed by the fruit in clusters. The berries are often $\frac{1}{2}$ in. in diameter, purple black with a heavy bloom. They ripen late, even after frost. This is probably the most wide spread of American native grapes and, with its varieties, is the one oftenest found in the woodlands of the Northwest.

var. Beta. Probably like the Janesville, a hybrid of *V. riparia* with some cultivated grape. Originated in Carver County, Minnesota, it has proved to be entirely hardy in this state without winter protection. It was brought to notice by the State Experimental Station at St. Anthony Park, where it was first reported about 1900. Prof Green's report of that year says, "Has been grown for a good many years in that section and found to be exceedingly hardy, and able to stand fully exposed thru some of our most severe winters. The fruit is of as good quality as the Janesville." Northern nurserymen are offering it as a fruiting grape for exposed locations, but as it is a vigorous climber and with good foliage, it is also a valuable addition to the ornamental list.

WISTARIA

Leguminosæ

A small genus of climbing plants that gives us some of our most ornamental vines. They bear elegant panicles of flowers in shades of purple and white. With a single exception, they are all natives of China and Japan. The foliage in all the species is compound and in pleasing shades of green. *W. Chinensis* is one of the best known and probably the most used of all the varieties.

W. Chinensis. [Syn. *W. Sinensis*.] (CHINESE WISTARIA.) May-August. This variety has pale green, pinnate foliage. It bears profusely, dense drooping clusters of purple, pea-shaped flowers. It is the most prolific variety in bloom. It blooms in May and usually it gives a smaller by-bloom in August or September. This variety was introduced into England about 1816. Thrives best in sunny situations and requires good soil. Valuable for covering trees, large trellis work or porches. It may also be trained to standard form.

var. alba. A form with pure white flowers.

W. multijuga. (LOOSE CLUSTERED WISTARIA, JAPANESE WISTARIA.) This is a Japanese species. It is distinguished from *W. Chinensis* by longer and looser racemes. The flowers are smaller and appear about a week later. Botanically, this is a variety of *W. Sinensis* but for horticultural purposes its distinctness needs emphasis.

W. speciosa var. **magnifica.** [Syn. *W. frutescens.*] (AMERICAN WISTARIA, SHRUBBY OR CLUSTER FLOWERED WISTARIA.) A valuable native variety, not as tall a grower as *Chinensis*, but often attains the height of thirty or forty feet. It has a dark green foliage and short racemes of lilac-purple flowers with yellow spots. These appear about three weeks later than *W. Sinensis*. This is an improved variety of *W. speciosa* and has larger and denser clusters.

EVERGREEN SHRUBS

THESE form a distinct group of ornamental species, and where they are hardy, they are indispensable; not only for their foliage and flower effects in the summer, but also for the evergreen nature of their foliage. None of them are strictly hardy in the latitude of Minnesota, but as most of them can be propagated here, we are able to furnish these to our customers in the more temperate sections of the country. A good many of the Azaleas, Rhododendrons and some others are directly imported from European growers who make a specialty of them. Our importations will be found strictly first-class and in thrifty condition.

NOTE: We do not include in this group the low-growing, native or coniferous evergreen. These will be found under the heading, Coniferous Evergreens.

ANDROMEDA

Ericaceæ

- A. Catesbæi.** (See *Leucothœ Catesbæi.*)
- A. floribunda.** (See *Pieris floribunda.*)
- A. Japonica.** (See *Pieris Japonica.*)

AZALEA

Ericaceæ

A. amoena. 3 ft. June. This evergreen Azalea is a very great favorite where it is successfully grown. It is most used as an edging to beds of deciduous Azaleas and Rhododendrons. It is of dwarf, bushy habit. During the month of May it is covered with claret-colored flowers. The shade varies somewhat but is always bright. The flowers completely cover the plant.

BERBERIS—Barberry

Berberidaceæ

B. aquifolium. [Syn. *Mahonia aquifolium.*] (HOLLY LEAVED MAHONIA, ASHBERRY.) 3 ft. May. A native evergreen species and hardy in sheltered positions. It is of medium height, with shining prickly leaves, of a deep, bronze-green color. The bright yellow flowers in May are succeeded by small, blue berries.

B. Japonica. [Syn. *Mahonia Japonica.*] (JAPANESE MAHONIA OR JAPANESE ASHBERRY.) 3 ft. May. A strong grower, with larger leaves than *B. aquifolium*. It also succeeds best in shady locations. Not as hardy as the former.

BUXUS—Box or Box Tree

Euphorbiaceæ

The species here listed are those that have been so long popular in England for border and hedge purposes. They have also been much used in the eastern states, and are indispensable where the climate is congenial. They offer a variety of heights. The wood of all species is very hard and close grained, and is in great demand for engraving and the finer turnery work. The standard or upright forms are generally grown in tubs or large pots.

B. sempervirens. (COMMON BOX TREE.) 4 ft. A shrub or small tree, in its native habitat reaching a height of five feet. It is of rather slow growth, with small shining foliage; stands pruning well. There are a number of garden varieties of this species which exhibit differences in size and in shape and coloring of the leaf.

var. **suffruticosa**. [Syn. var. *nana*.] (DWARF BOX.) 18 in. This is the variety that is used so extensively for low borders, and is one of the most desirable shrubs for that purpose where it is hardy. A very slow grower. In its general characteristics it resembles the type.

COTONEASTER

Rosaceæ

C. buxifolia. (BOX-LEAVED COTONEASTER.) 3 ft. May. A low growing evergreen shrub, with oval, box-like foliage. The white flowers appear in May and are followed by showy crimson fruits which hang on all winter.

C. microphylla. (SMALL-LEAVED COTONEASTER.) 18 in. May-June. A low prostrate shrub, densely branched. The leaves are small, shining above and pubescent beneath. Flowers inconspicuous, followed by bright red fruit.

CRATÆGUS—Thorn

Rosaceæ

C. Pyracantha. (See *Pyracantha coccinea*.)

DAPHNE—Garland Flower

Thymelæaceæ

D. Cneorum. 1 ft. May-August. A charming prostrate shrub, with narrow glaucous green foliage. Flowers in dense terminal clusters, fragrant, and borne freely all summer. It is one of the best low growing evergreen, and should be more used where it is hardy.

EUONYMUS

See Climbing and Tailing Shrubs or Hardy Vines.

ILEX—Holly

Ilicineæ

I. aquifolium. (ENGLISH HOLLY.) In cultivation in this country it rarely exceeds a shrub in size. It forms a pyramidal head. It has a numerous following of sub varieties.

I. crenata. (JAPANESE HOLLY.) 8 to 10 ft. May-June. A loose, rapid grower, with large, deep, dark green glossy foliage. The inky black berries are borne profusely.

I. glabra. (INK BERRY, WINTER BERRY.) 8 ft. June. A much branched, upright shrub, with oval, dark green foliage, often spotted with black.

I. opaca. (AMERICAN HOLLY.) 10 ft. Foliage like that of the English Holly but of lighter color. Fruit deep crimson. The popular variety for Christmas decoration.

KALMIA—American Laurel

Ericaceæ

K. latifolia. (MOUNTAIN LAUREL OR CALICO BUSH.) Beautiful ornamental evergreen shrubs with purple-pink or almost white showy flowers in terminal corymbs. Some of them are considered hardy in the Northwestern States. The dainty rose pink buds and cream white flowers, dashed with pink when in full bloom, contrast distinctly with the dark foliage. This plant ranks in beauty with the native Rhododendron.

LEUCOTHÆ

Ericaceæ

L. Catesbæi. [Syn. *Andromeda Catesbæi*.] 4 ft. May. This is much used with the Rhododendron, Kalmia, etc. The shining dark green leaves color in brilliant shades of bronze in the autumn. In the spring it bears small, white, wax-like flowers, delicate and very fragrant.

MAHONIA—(See Berberis)

PIERIS

Ericaceae

P. floribunda. [Syn. *Andromeda floribunda*.] (LILY OF THE VALLEY TREE.) 3 ft. May. A dense growing shrub of dwarf habit. Flowers pure white in dense terminal panicles.

P. Japonica. [Syn. *Andromeda Japonica*.] A Japanese species recently introduced. Has narrower foliage than the above which takes on pleasant autumnal tints. Pendulous spikes of pure white flowers. More upright growing than *P. floribunda*.

PYRACANTHA—THORN

Rosaceae

P. coccinea. [*Crataegus Pyracanthus*.] (EVERGREEN THORN.) 5 ft. June. A dense grower with stiff branchlets, armed with stout thorns. Deep, shining green foliage which is enhanced by brilliant scarlet berries about the size of a pea, which are produced in large bunches and hang on very late.

RHODODENDRON

Ericaceae

This magnificent genus of Evergreen shrubs is of such importance that, like the Rose, it should have almost an entire catalog by itself. In fact, those growers who specialize in this class of plants list many hundreds of distinct species and varieties. In the northwest, however, like most of the other Evergreens described in this section, the Rhododendron is successful only as grown in tubs or large pots, or where it can be given proper winter protection. The two species we have listed are both native to America and furnish us the most hardy varieties. They have a wide range of color, from purest white to deepest crimson, including all shades and combinations.

R. Catawbiense. 5 to 8 ft. June. A native species from which many of named varieties have sprung, common in the Allegheny Mountains. Forms a dense, broad bush, with deep green foliage. At the extremity of each branchlet, it bears immense heads of clear lilac flowers spotted with purple.

R. maximum. (GREAT LAUREL OR GREAT BAY.) 8 to 10 ft. July. This is one of the hardiest species, being hardy as far north as Quebec and Ontario. The foliage is very large and effective, each leaf often measuring 10 in. long. The flowers are borne in dense heads, four to six inches across; in color it is white tinged with pink and yellow. Like the preceding, it has many sub varieties, offering a wide range of color.

YUCCA

See Herbaceous Flowering Plants.

DECIDUOUS TREES

SO varied are the purposes to which are put the shade and ornamental trees, and so widely different in character are the trees themselves, that it is difficult to adopt any system of cataloging that will be a safe guide in all sections of the country. This is not only true as regards hardiness but also as regards height and general behavior. The most of the varieties we list are hardy and successful in the latitude of Minnesota; in fact many of them are natives. Others, however, are only semi-hardy in this section altho they are often successful in retired or protected locations. Each variety is therefore described from the stand point of its own habitat, and the buyer is referred to our "Key of Hardiness" as guidance in making selection, at least where there is any doubt. As to height, we have adopted the following broad classification which will give a fair idea of the comparative size of the different species listed.

Lg. Trees usually attaining a height of fifty feet or more at maturity.

Med. Trees usually less than fifty feet and more than twenty-five feet at maturity.

Sm. Trees commonly less than twenty-five feet at maturity.

Under this head we also include the deciduous conifers, such as Larches, etc. In any, save the smallest place, the trees form the framework of the planting. They are the first to be considered and the first to be placed. Some shade

about the house is absolutely necessary for comfort during the hot days of summer, and much shelter may be afforded by the deciduous trees during our bleak and stormy winters. But more than this, they are necessary in many places to cover unsightly or unpleasant objects, to open vistas, to form a background for other ornamental material, and also for their own individual beauty and the variety they afford in their varying shades of color and form. What beautiful shades and tints of color may be found in the foliage of different trees, and in the same trees at different seasons of the year! Some of our trees produce beautiful flowers, others beautifully colored leaves; some take the spiral form and others grow with a well rounded outline; some grow with a spreading or graceful habit while others are close and massive in their build; some have thick and compact foliage, while others are provided with light and airy leaves;—and the true lover of nature will find much pleasure in the study of the numberless forms and varieties, and especially in arranging them so as to obtain the most real beauty possible.—"Landscape Gardening as Applied to Home Decoration."—Maynard.

The ornamental value of deciduous trees is only one of the considerations. Here in the West, many sections of which are treeless, the species included in this class are of great importance from an economic point of view. As a western nursery, therefore, it is proper that our catalog should give prominence to those varieties which have been tested in this latitude and found desirable for shelter belt and timber planting. For these purposes we grow a special grade of stock, in one-two and three-year-old sizes, to enable the planter to cover as cheaply as possible large areas of ground.

The question of street trees is also one great importance in the West. So many new towns are springing up in this section that we find the demand for street trees increasing annually. There are a goodly number of absolutely hardy varieties, (many of them native), which are well suited to this purpose. These we grow in all sizes, from one inch to three and four inch bodies.

The available number of trees from which selection may be made is large. There are in American and European nurseries and gardens more than 600 species in cultivation, most of which are hardy in the Northern and Middle States. About 240 of them are American, the balance are from Europe and Asia. Comparatively few horticultural varieties are found in American nurseries as compared with European, but this need not be regretted, as horticultural varieties are merely curious or monstrous forms. In planting, one must rely chiefly on the types, using the horticultural varieties sparingly, for restfulness should be the prevailing character of the masses and groups of trees. It is essential that the trees should be well adapted to the climate and the soil, and in this respect a careful observation of the natural growth of the locality will give many good hints. Other considerations are the heights the trees attain, the character of growth, the color effect of foliage and flowers, fruits, autumnal tints and winter effects.—"Cyclopedia of American Horticulture."—Bailey.

ACER—Maple, Box Elder

Sapindaceae

The Maples are among our most ornamental and valuable trees for park and street planting. Nearly all assume a splendid coloring in autumn, especially the species in North America and Eastern Asia which surpass by far the European Maples. Many of them are valuable shade trees and others are particularly desirable as ornamental specimens.

A. campestre. (EUROPEAN CORK MAPLE.) Sm. A tree of moderate dense growth, with peculiar, corky bark. The foliage is small and a dull green in color; in form something like the gooseberry leaf.

A. Ginnala. [Syn. *A. Tartaricum* var. *Ginnala*.] (GINNALA MAPLE.) Sm. A graceful, shrub-like tree with handsome foliage which turns to a bright red in autumn. One of the most beautiful and brilliant of autumn coloring trees, and is much used as a substitute for the Japanese Maple where that is not hardy.

A. Negundo. [Syn. *Negundo fraxinifolium*.] (ASH-LEAVED MAPLE, BOX ELDER.) Med. to Lg. This tree is almost too well known in the West to need description. It has probably been more planted in the treeless portions of this country than any other, with the possible exception of the Cottonwood. Its vigorous growth and tenacity give it unequaled advantages in dry or exposed locations, such as are common in the Northwestern States. It is a native tree, like the Maple in its seed, and like the Ash in its foliage. For shelter-belts and prairie timber planting, it is a very valuable species. Its vigorous nature helps other trees to get a foothold when planted with it, and it is also benefited when used in mixed plantings. Its height also is effected considerably by locality. In some sections of Minnesota it is reckoned a large tree; in others it is nearly a dwarf. In some western cities it is even used as a street tree but there are very few places where other and better trees for this purpose cannot be found.

A. palmatum. [Syn. *A. polymorphum*.] (JAPAN MAPLE.) Sm. This species offers an extremely handsome group of smaller trees, of dense tho graceful habit, and elegant foliage which is especially beautiful in the spring for its delicate shades of green and red, and again in the autumn when the leaves assume the most striking tints. They are not strictly hardy in the Northern States but succeed well in favorable locations. They grow best in partly shaded situations and well drained, rich soil. We list the best varieties.

var. **atropurpureum.** (BLOOD-LEAVED MAPLE.) Sm. This is one of the most popular varieties. The foliage is of a deep, blood-red color and well retained throught the summer and autumn. It is generally used in planting in groups, to obtain a mass of crimson color but it is also equally desirable as a single specimen.

var. **dissectum.** [Syn. var. *dissectum atropurpureum*.] (CUT-LEAVED JAPAN MAPLE.) Sm. One of the most striking varieties of this class. In form it is dwarf and somewhat pendulous. Leaves are deeply and delicately cut. They are of a delicate rose color when they are young, changing to a deep purple as they become older.

var. **septemlobum.** [Syn. *ampelopsilobum*.] (SEVEN-LOBED MAPLE.) Sm. Of larger growth than the type, with larger foliage. The leaves are light green in summer, coloring a bright crimson in the fall.

A. Pennsylvanicum. [Syn. *A. striatum*.] (STRIPED MAPLE, MOOSEWOOD.) Med. A handsome, medium sized tree, of upright habit, with bright green, large foliage, turning clear yellow in autumn. It has beautiful striped bark, being a greenish ground striped with white. Attractive in winter.

A. platanoides. (NORWAY MAPLE.) Lg. A fine and handsome tree from Europe, with round, spreading head, resembling somewhat *A. saccharum*. The leaves turn a pale yellow in autumn, often highly colored, especially in the case of some of its varieties. In the milder sections this rivals the native Hard Maple as a street tree. It is an excellent shade tree and always rich in appearance.

var. **Reitenbachii.** Med. The foliage of this variety is of a greenish red when it is unfolding. It turns to a dark blood red in late summer.

var. **Schwedleri.** (SCHWEDLER'S PURPLE MAPLE.) Med. A beautiful variety. The young shoots and leaves are of a bright purplish and crimson color. They change to a purplish green in the older leaves. A most desirable ornamental tree for the contrast of its foliage.

A. Pseudo-platanus. (SYCAMORE MAPLE.) Med. A common variety in Europe. Very handsome, broad headed tree, with thick green foliage. It thrives best in an atmosphere that is cold and moist. Not much planted in the Northwest. There are a number of ornamental varieties of this species.

A. rubrum. (RED OR SCARLET MAPLE.) Med. A native species and attractive for its rounded form and fine foliage. It produces deep, red blossoms which appear before the leaves. In autumn the foliage changes to brilliant scarlet, making the trees very conspicuous.

A. saccharinum. [Syn. *A. dasycarpum*, *A. eriocarpum*.] (SILVER MAPLE, SOFT MAPLE.) Lg. A well known ornamental tree, with wide spreading, slender branches. Succeeds almost anywhere but thrives best in rich and moist soils. Has been much used as a street tree. If exposed to severe wind, the limbs are often broken in the crotches, but this may be largely overcome by occasionally "heading in" the branches and retaining the central shoot as much as possible. It is valued for windbreaks on account of its quick, upright growth.

var. **Wieri.** [Syn. var. *Wieri laciniatum*.] (WIER'S CUT-LEAVED SILVER MAPLE.) Med. This distinct variety is one of the most beautiful of our hardy trees, having cut or dissected foliage. Its growth is rapid, the shoots slender and drooping, giving it a habit almost as graceful as the Cut-Leaved Birch. Foliage is profuse, and on the young wood especially very deeply and delicately cut. Leaf stalks are long and tinged with red on the upper surface. It ranks among the most interesting and attractive lawn trees, and may easily be adapted to small grounds by occasionally cutting back which it will bear to any degree necessary.

A. saccharum. (SUGAR OR ROCK MAPLE.) Lg. A beautiful and always popular tree, growing on a smooth trunk and forming a dense, oval head. The foliage is large and handsome and of a rich pleasing green, turning to beautiful shades of orange yellow and red in the autumn. In soils where it is thoroly at home, it makes a splendid and uniform street tree, and it is adapted to nearly all kinds of soil. This is native in Minnesota and has also been found native in the Dakotas. As a young tree, its bark is somewhat subject to sunscald and should be given artificial protection with laths, paper or burlap until its branches spread out far enough to shade its own body.

A. spicatum. (MOUNTAIN MAPLE.) Med. A rare and handsome sort, with broad, rough foliage, deep crimson twigs and showy clusters of seed vessels. Of close, upright habit of growth. The leaves turn yellow and scarlet in autumn. Valuable as an undergrowth.

A. Tartaricum. (TARTARIAN MAPLE.) Sm. A small, shrubby tree of rounded form. Leaves are small, serrated, and on long leaf stalks. Thrives best in damp soil. The foliage takes on a yellow shade in autumn.

ÆSCULUS—Horsechestnut, Buckeye

Sapindaceæ

A. glabra. [Syn. *Pavia glabra*.] (AMERICAN CHESTNUT, OHIO BUCKEYE.) Med. A native variety, forming a small tree. It has proven hardy in Minnesota, but is somewhat smaller than farther South. The flowers are a greenish yellow and appear in May. It is of open, spreading growth, and is valuable either as specimen tree or works well in groups on larger lawns. The hardiest of the genus.

A. hippocastanum. (COMMON HORSE CHESTNUT.) Lg. A tree of handsome, regular outline. In May it is covered with magnificent erect panicles of white flowers, lightly marked with red. One of the most popular street trees in Europe as well as in the Eastern States. It has a number of varieties, including double white, double red and a dwarf type.

AILANTHUS—Tree of Heaven

Simarubaceæ

A. grandulosa. Lg. A valuable tree from China and desirable in many places for street planting. It is of spreading habit, with elegant, palm-like foliage. It grows in almost any soil where hardy but is best in a light, loose soil. Stands the dust and smoke of cities well.

ALNUS—Alder

Betulaceæ

A. glutinosa. (BLACK ALDER.) Med. A rapid growing tree, attaining a height of from thirty to fifty feet. Foliage roundish, wedge-shaped, of a rich, dark green color. Especially adapted to moist situations.

var. **imperialis.** (CUT-LEAVED ALDER.) Much like the type but with deeply cut foliage.

A. incana. Med. This species has oval, dark green foliage. Thrives on drier soils than the other sorts.

AMELANCHIER—Shad-bush

Rosaceæ

A. Canadensis. (COMMON SHAD-BUSH.) Med. Varies considerably in size, sometimes hardly more than a large bush. It bears white, cherry-like blossoms in May or June. These are followed by small purplish fruits which are edible and of a sweet flavor.

AMYGDALUS (See Prunus)

(Also under Ornamental Deciduous Shrubs.)

ARALIA

Araliaceæ

See Ornamental Deciduous Shrubs. Many catalogs class these among the deciduous trees but in the North where they are hardy, they seldom amount to more than a good sized shrub and we have therefore placed all species under that head.

BETULA—Birch

Betulaceæ

The Birches number among them some of our most beautiful and useful native trees. They are indispensable in park and lawn planting, and are also receiving more and more attention for street uses. It is primarily a tree of the North; in fact, no tree grows farther North than the Birch. The foliage of all species is handsome in its effect and rarely attacked by any insects. All species are of graceful habit, with slender and often pendulous branches. The rare color of the bark makes them picturesque and desirable everywhere.

B. alba. (EUROPEAN WHITE BIRCH.) Lg. A graceful tree with silvery bark and slender branches. Quite erect when young, but after four or five years' growth assumes an elegant drooping habit. A successful tree even on light soils.

var. **atropurpurea.** (PURPLE-LEAVED BIRCH.) Med. A distinct form with dark, purplish foliage. White bark.

var. **fastigiata.** (PYRAMIDAL BIRCH.) Med. Of elegant pyramidal habit, similar to the Lombardy Poplar in general shape. Very distinct.

var. **lenta.** (CHERRY, SWEET OR BLACK BIRCH.) Lg. A handsome tree with rounded head, branches becoming pendulous when older. It is very attractive in the spring with long, slender catkins. Considerably resembles the wild cherry.

var. lutea. (YELLOW BIRCH.) Lg. A native tree in the Northern States, much resembling *var. lenta* in habit, except that the leaves are not so bright a green and are more downy on the under side. Bark is silvery gray or light orange, and a reddish brown on the older trunk; young bark is aromatic.

var. pendula laciniata. (WEeping CUT-LEAF BIRCH.) Lg. This magnificent tree is, without question, the most popular and the most planted of all pendulous or so-called weeping trees. It is a tall, slender tree, yet with vigorous growth. It has an erect central trunk, somewhat pyramidal in shape with graceful, drooping branches and white bark on all the old wood. The foliage is fine, thin, deeply and delicately cut, and of a beautiful shade of green. The whole tree presents a soft and delightful effect not found in any other hardy ornamental tree. The pruning knife should seldom if ever be used as it grows with great regularity if given good soil and sufficient water. Altogether, this variety presents a combination of valuable characteristics rarely met with in a single tree.

B. nigra. (RED OR RIVER BIRCH.) Lg. A moisture-loving, graceful tree, with slender, very numerous branches. It is remarkable for the manner in which its bark is constantly tearing or peeling away which gives it a very ornamental effect. It is of broad, pyramidal habit. The smaller branches are a deep brownish red, peeling as they grow larger and gradually assuming a peculiar buff color.

B. papyrifera. [Syn. *papyracea*.] (PAPER OR CANOE BIRCH.) Lg. Of vigorous, upright habit. It has broad, handsome foliage and is remarkable for the pure white color of its bark. This feature is, however, not manifested until the tree is four inches or more in diameter.

B. populifolia. [Syn. *B. alba* var. *populifolia*.] (AMERICAN WHITE BIRCH, POPLAR BIRCH.) Med. A small or medium sized, graceful tree. Thrives well in even poor and dry soils. In some sections it is reported to be a short lived tree. The bark is a grayish white, not as silvery as *B. alba*.

CARPINUS—Hornbeam

Betulaceæ

C. Betulus. (EUROPEAN HORNBEAM.) Med. This species resembles *C. Americana*, but of more twiggy growth and holds its foliage later in the season.

C. Caroliniana. [Syn. *C. Americana*.] (AMERICAN HORNBEAM, WATER OR BLUE BEECH.) Med. An ornamental tree, of dense tho slender growth. The branches are often pendulous. The dark, bluish green foliage changes to scarlet or orange yellow in the fall. In habit of growth, quite similar to Beech.

CARYA (See *Hicoria*)

CASTANEA—Chestnut

Cupulitæræ

C. Americana. (AMERICAN CHESTNUT.) Lg. This is a well known variety, common in the forests of the Atlantic States. It is the tallest and most vigorous species. The nuts tho smaller have a better flavor than the European variety.

C. sativa. [Syn. *C. vesca*.] (SPANISH SWEET CHESTNUT.) Lg. This species furnishes the varieties from which the large Chestnuts of commerce are grown. It forms a handsome tree tho not as vigorous as *C. Americana*.

CATALPA

Bignoniaceæ

C. bignonioides. [Syn. *C. syringifolia*.] (EASTERN CATALPA.) Med. A native of the Southern States. It is a spreading irregular tree, with very large, heart-shaped leaves and pyramidal clusters often a foot long of white and purple fragrant flowers. Blooms in the latter part of June.

var. **nana**. [Syn. *C. Bungei*.] (DWARF CATALPA.) Sm. A species from Japan, with large, glossy foliage. Usually grafted on stocks five to eight feet from the ground.

C. ovata. [Syn. *C. Kœmpferi*.] (JAPANESE CATALPA.) Med. Introduced from Japan by Siebold. A species with deep green, glossy foliage. Flowers fragrant, cream colored sprinkled with purple and yellow. Not so large as *C. bignonioides*, and on shorter and looser panicles.

C. speciosa. (WESTERN CATALPA.) Med. to Lg. This is a very desirable ornamental tree, closely allied to *C. bignonioides* but taller and much hardier. It is said to have originated in the West and is certainly more common in the Mississippi Valley. Of late years has been much used in forest planting in the prairie states of the middle west. Its blossoms open two weeks earlier than those of *C. bignonioides*. It has large, luxuriant foliage, eight to twelve inches long. The flowers are borne in showy panicles. The fruit is in the form of a very long, cylindrical pod, one-half to three-fourths inch thick, and six to eighteen inches long.

CELTIS—Nettle Tree

Urticaceæ

C. occidentalis. (AMERICAN NETTLE TREE.) Med. A rare native tree, with wide spreading head and numerous slender branches. The bark is thick and rough. The leaves are about the size and form of the apple, but more pointed and of a bright, shining green. Rarely attacked by insects. In general appearance it very much resembles the Elm.

CERASUS—Cherry

Rosaceæ

These take an important place among the flowering trees. They are mostly vigorous growers, some of them very tall; others, however, are mere shrubs and will be found described under that head. The large growing forms make excellent trees for either shade or ornament.

C. Avium var. **alba plena**. (DOUBLE WHITE FLOWERING CHERRY.) Med. A very fine, free blooming variety, with double flowers in May. The individual flowers resemble miniature white roses.

C. Avium var. **pendula**. (WEEPING PINK CHERRY.) Sm. One of the best drooping trees of pendulous habit. The branches are irregular, drooping and of graceful form. Bright rose colored blossoms that cover the tree.

C. Avium var. **rosea plena**. (DOUBLE PINK FLOWERING CHERRY.) Med. Similar to var. *alba plena* but with pink flowers.

C. Japonica var. **pendula**. Sm. Of graceful form, with single white flowers and red fruit. A small headed tree of pendulous habit.

C. Japonica var. **rosea pendula**. Sm. A pyramidal tree with rough, speckled bark and oval, dark green foliage. The pure white blossoms in spring are borne on long pedicels in long drooping racemes, followed by black fruit.

C. serotina. (WILD BLACK CHERRY.) Lg. Valuable either as an ornamental or timber tree, and is one of the most beautiful natives. It is a strong, straight tree, with dark brown bark. Dark green foliage which retains its color and it is one of the last to lose its leaves. The flowers are borne in long loose racemes, and are followed by purple black fruit ripening in late summer. A valuable timber tree, furnishing lumber for cabinet work. It is also much used in forestry planting.

CERCIS—Judas Tree, Red Bud

Leguminosæ

C. Canadensis. (AMERICAN RED BUD.) Med. An ornamental tree, of irregular rounded form. It has large, heart-shaped, leathery foliage of dark green. Derives the name of Red Bud from the profusion of delicate, reddish purple flowers with which it is covered before the foliage appears. They grow best in rich, sandy and somewhat moist loam. The Japanese variety is hardy only in the Southern States.

CHIONANTHUS

(See Ornamental Deciduous Shrubs.)

CLADRASTIS—Yellow Wood

Leguminosæ

C. tinctoria. [Syn. *Virgilia lutea*.] Med. A tree of moderate growth, with a short trunk and rounded head. The foliage is compound, of a light green color, turning to a warm yellow in autumn. Flowers are pea-shaped, white, sweet scented. They appear in June in great profusion, being borne in long, drooping racemes and quite covering the tree.

CORNUS—Dogwood

Cornaceæ

C. florida. (FLOWERING DOGWOOD.) Sm. A native American species, of spreading, irregular form. It has handsome, deep green foliage. The flowers which appear in May are of large size and pure white. They are followed by deep crimson, showy fruit. It has fine foliage which takes on gorgeous autumn coloring. It is one of the most brilliantly colored shrubs under cultivation. (See Ornamental Deciduous Shrubs.)

CRATÆGUS—Thorn, Haw, Hawthorn

Rosaceæ

This genus offers many fine ornamental shrubs and trees, mostly of dense and low growth. They are characterized by handsome foliage which have handsome foliage which turns in most cases to a brilliant coloring in the fall. Many of them have handsome flowers and very decorative fruits. Where successful, they are a valuable class of small trees for lawn groups.

C. coccinea. (SCARLET FRUITED THORN.) Sm. Rarely exceeds twenty-five feet in height. Broad, oval foliage of a lustrous green. It bears white flowers profusely in May. They are succeeded by large scarlet fruits. Of the highest decorative value and one of the hardiest.

C. Crus-galli. (COCKSPUR THORN.) Med. This variety is of wide spreading, often pendulous habit. The branches have numerous slender spines. The foliage is a glossy green. Flowers white, tinged with red in May. They are followed by scarlet fruit.

C. mollis. (SCARLET HAW.) Med. One of the most decorative species, with large, bright green foliage and showy flowers. The pear-shaped fruits ripen in September and are of a bright scarlet color.

C. monogyna var. **alba flore plena.** (DOUBLE WHITE HAWTHORN.) Sm. An elegant form with very double, white flowers. Very ornamental in both foliage and flower. Makes a striking contrast with the double scarlet variety.

C. monogyna var. **Pauli.** (PAUL'S DOUBLE SCARLET HAWTHORN.) Sm. The highest colored form of the class and very showy. Flowers bright carmine red. They are large and double, and borne in clusters like Verbenas.

C. monogyna var. **rosea plena.** (DOUBLE RED HAWTHORN.) Sm. Of fine habit, with rich luxuriant foliage. Flowers of good size and of a deep crimson color; very double.

C. Oxyacantha. (ENGLISH HAWTHORN.) Sm. This is the Hawthorn of English literature. Forms a large shrub or small tree, with spreading branches and stout spines. Flowers are single white in May, followed by scarlet fruits. Much used as a hedge plant in the East and in England. Often confounded with *C. monogyna* and less cultivated than that species and its varieties.

CYTISUS—(See Labunum)

FAGUS—Beech

Fagaceæ

A genus of tall growing, noble, symmetrical trees, with light gray bark and dark green foliage. In their natural climate, they are among the most ornamental trees and attractive thru every season of the year.

F. ferruginea. (AMERICAN BEECH.) Lg. This is the native variety and is one of the most majestic of American trees. It is always symmetrical and handsome; characteristic, smooth, light gray bark and handsome, glossy foliage. Excellent for avenue planting.

F. sylvatica. (EUROPEAN BEECH.) Lg. This species has given rise to nearly all the horticultural varieties in cultivation. It is a native of central and northern Europe where it is an important forest and commercial tree.

var. **heterophylla.** [Syn. var. *asplenifolia*.] (FERN LEAF OR CUT LEAF BEECH.) Med. Of compact growth, with fine cut, fern-like foliage. Makes an elegant lawn tree. The young growth is slender, drooping and of a very graceful appearance.

var. **pendula.** (WEeping BEECH.) Lg. A vigorous and picturesque tree. The trunk grows irregularly tho upright, while the side branches assume a variety of directions, upright and drooping, and produce a most picturesque appearance.

var. **purpurea.** (PURPLE LEAVED BEECH.) Med. A beautiful shade and ornamental tree, of vigorous and symmetrical growth. The foliage in the spring is deep purple, and later in the season changes to crimson purple and again to deeper purple in the fall.

var. **purpurea Riversi.** (RIVER'S BLOOD-LEAVED BEECH.) Med. The foliage of this variety is a handsome purplish crimson in the spring, gradually deepening to purple in the summer. About the most intensely colored in its foliage of any large growing tree.

FRAXINUS—Ash

Oleaceæ

F. Americana. (WHITE ASH.) Lg. A well known timber tree. It attains a large size and is of great value for timber. A good street tree in many sections, is a rapid grower. It produces a broad, round head and has a straight clean trunk. While young, its foliage has a remarkably soft and mellow appearance.

F. excelsior (EUROPEAN ASH.) Lg. This species forms a more rounding head than the *Americana* and has darker foliage. Short, thick trunk and gray bark. Pinnate leaves and black buds. It has many varieties.

var. **aurea.** (GOLDEN ASH.) Med. With this species, the foliage is of a rich yellow early in the season. It is also conspicuous for its golden bark.

var. **diversifolia.** [Syn. *F. heterophylla*, *F. laciniata*.] (CUT-LEAVED ASH.) Med. This variety has a simple instead of a compound leaf like the type. The margins are finely cut, giving it a distinct and handsome appearance.

F. lanceolata. (GREEN ASH.) Lg. This species is of greatest value in the prairie states of the Northwest. Altho not so tall a grower nor so rapid in growth, it is much harder and better adapted to the extreme conditions of this section. It is valuable for street planting as a shade tree and in all kinds of prairie timber culture. Somewhat resembles *F. Americana*. Grows very fast when young and before it produces seed, after which its growth is slower.

F. nigra. [Syn. *F. sambucifolia*.] (BLACK ASH, WATER ASH.) Sm. This species is valuable only for planting in wet places where other trees are not successful. It is of good form and foliage. The foliage when bruised exhales an odor similar to that of the Elder.

GINKGO—Maidenhair Tree

Taxee

G. biloba. [Syn. *Salisburia-adiantifolia*.] (GINKGO, MAIDENHAIR TREE, KEW TREE.) Lg. A tall, sparsely branched, usually slender tree. A Chinese tree and a very picturesque variety for ornamental effect. Its beautiful, fern-like foliage resembles in shape somewhat a Maidenhair Fern, hence the name. Has been more planted in Washington, D. C., than any other place in the country, and is there growing in esteem as a street tree.

GLEDITSCHIA—Honey Locust

Leguminosæ

G. triacanthos. (HONEY OR SWEET LOCUST, THREE-THORNED ACACIA.)

Med. This is an ornamental, native tree of more than ordinary value. Its branches are spreading, forming a broad, rather loose head. The branches and trunk are covered with stout branched thorns. Its foliage is finely compound, giving it a soft and beautiful appearance, light green in the spring and summer, turning to a clear yellow in fall. (See Robinia.)

GYMNOCLADUS—Kentucky Coffee Tree

Leguminosæ

G. Canadensis. Med. So called because its seeds were used for coffee west of the Alleghany Mountains about the time of the Revolutionary War. A rare tree, native in parts of Minnesota, and also in South Dakota. It is a striking and ornamental tree with a regular open top and twigless branches. Rough barked. It has broad, compound foliage of a singular bluish green color. Bears white flowers in loose, open racemes. The seed pods are very interesting, averaging from five to ten inches long, flat scythe-shape, dark reddish brown and hang on the tree unopened all winter. Thrives best in rich soil.

HICORIA (Syn. *Carya*)—Hickory

Juglandaceæ

H. laciniosa. [Syn. *Carya sulcata*.] [BIG OR BOTTOM SHELLBARK HICKORY, KING NUT.] Lg. A similar tree to *H. ovata*, tho not indigenous quite so far North. The nuts are exceptionally large, the husk being sometimes two to three inches long. Kernel not so sweet or rich as *H. ovata*.

H. minima. [Syn. *Carya amara*.] (BITTER NUT, SWAMP HICKORY.) Lg. A valuable, native tree with handsome, rather broad head. It is one of the most rapid growing species of the group. Bark grayish brown. Readily distinguished by its orange yellow buds and the very bitter fruit. Probably the hardiest and best form of Hickory for planting in the North.

H. ovata. [Syn. *Carya alba*.] (SHAGBARK HICKORY, SHELLBARK HICKORY.) Lg. The well known, nut bearing Hickory and also a very handsome ornamental tree. It is picturesque in form, with stout branches, forming a rather broad, usually open head.

JUGLANS—Walnut, Butternut

Juglandaceæ

This species furnishes us two of our grandest, native, ornamental trees. In congenial soils they are very valuable trees for all kinds of lawn, park or street planting. They have a characteristic foliage not found in any other species and a delightful effect is produced wherever used.

J. cinerea. (BUTTERNUT, WHITE WALNUT.) Very much resembles the Black Walnut. It is a moisture loving tree and succeeds best on low rich soils. The nut is of milder and, considered by many, of better quality. A broad, open top tree, with light green, compound foliage and gray bark.

J. nigra. (BLACK WALNUT.) Lg. One of the noblest trees of the American forest. The wood is of well known value for cabinet making and interior finish. It is becoming scarcer annually and in many sections walnut groves are being established for the timber crop. Like the Butternut, it prefers a damp, rich soil. It, however, is a satisfactory tree on lighter soils tho slower in growth. It makes a uniform street tree and is also a very fine shade tree. As a forest tree for the Western States, it has many advantages; should be planted with other and more rapid growing varieties as a forest condition is conducive to its success.

KÆLREUTERIA—Varnish Tree

Sapindaceæ

K. paniculata. (JAPANESE VARNISH TREE.) Sm. A small ornamental tree from the Orient. Glossy, divided foliage and large terminal panicles of showy, golden yellow flowers. These appear in July and are followed by curious, inflated seed vessels, one and one-half to two inches long. Its pleasingly colored foliage and dense habit of growth, together with its showy flowers, makes it a very desirable lawn tree.

LABURNUM—Golden Chain, Bean Tree

Leguminosæ

L. vulgare. [Syn. *Cytisus Laburnum*.] Sm. This species takes its name from the graceful, drooping racemes of golden flowers which contrast with the dark green foliage. The foliage is somewhat peculiar in that it holds on until late autumn and then falls without changing color. Succeeds best in cool, shady situations.

LARIX—Tamarack

Coniferæ

L. decidua. [Syn. *L. Europea*.] Lg. An upright, conical grower, in general form resembling the Spruce, and one of our most beautiful lawn trees. In the spring when it is covered with its new, soft, feathery, light green foliage, it is strikingly beautiful. As it begins growth at a low temperature, it is the first of our trees to be covered with new foliage. Again in the autumn it is very beautiful as its needles turn a golden color before falling. Unlike most of the Conifers, this tree is deciduous after the first year. In the middle west, it has been much planted for timber and is a very good tree for fence posts and similar uses. Unlike the *L. Americana*, this variety does best on lighter, drier soils. It is a very hardy tree and a vigorous grower.

LIQUIDAMBAR—Sweet Gum

Hamamelidaceæ

L. styraciflua. (SWEET GUM, STAR LEAF OR RED GUM, ALLIGATOR TREE.) Lg. An American species with narrow, pyramidal head which becomes a narrow, oblong crown with age. Its star-shaped, maple-like leaves assume brilliant autumn colors, mostly crimson. It has corky bark which is very picturesque. A very beautiful tree in all stages of the season's growth and particularly handsome and conspicuous in the autumn.

LIRIODENDRON—Tulip Tree

Magnoliaceæ

L. Tulipifera. (TULIP TREE, WHITEWOOD, YELLOW OR TULIP POPLAR.) Lg. A very beautiful tree for park or avenue planting wherever it is hardy. It has handsome, clean foliage of a light bluish green color and assuming a brilliant coloring in the autumn. Rarely attacked by insects. The flowers which are tulip-shaped are quite large and of a greenish yellow color, blotched with orange. They appear early in June, and have a delicate magnolia-like fragrance.

MACLURA—Osage Orange (See Toxylon)

MAGNOLIA—Bay

Magnoliaceæ

A few species of this important group are fairly hardy in the Atlantic and Central States. Where successful, they are splendid trees for all ornamental purposes and are generally conceded to be the most magnificent in their flowers of any trees of their size.

M. acuminata. (CUCUMBER TREE.) Lg. A tall, pyramidal tree, often reaching ninety feet. The flowers are yellowish white and appear in June. Receives its common name from the fruit which when green resembles a small cucumber; it turns to deep scarlet as it ripens.

M. glauca. (SWEET OR SWAMP BAY, WHITE BAY.) Sm. A native tree of ornamental merit. Indigenous as far north as Massachusetts. In the South it is an evergreen. Foliage deep green above and silvery beneath. Flowers in June are of medium size, pure white and intensely fragrant.

MORUS—Mulberry

Moraceæ

M. alba. (WHITE MULBERRY.) Med. This species has been cultivated from the earliest time, chiefly for feeding the silkworm. It is a vigorous, bushy topped tree with light green foliage. The fruits are long, of very good size and color, usually white or violet, very sweet; now and then a tree bears fruit nearly or quite black.

var. **Tartarica.** (RUSSIAN MULBERRY.) Sm. A hardy type of *M. alba*, which was introduced into our Western States in 1877 by the Russian Mennonites. It differs little from the type of *M. alba* in general character. As commonly seen, it is a low growing, bushy topped tree, with small and much lobed leaves. The foliage is very successfully used as food for silk worms. It has been considerably used for low wind and snowbreaks, and is a good tree for this purpose even where not absolutely hardy as only the ends or new growth generally kills back. The fruit varies in size and color on different trees. It is generally very small and insipid; however, it is valuable as food for birds.

var. **Tartarica pendula.** (TEA'S WEEPING RUSSIAN MULBERRY.) Sm. A chance seedling of the Russian Mulberry type. It is usually grafted about six feet high on a straight Russian Mulberry stock. It then throws out long slender branches which are pendant to the ground. They droop immediately without training. A very fine, small, lawn tree. Not as hardy as the parent type but successful in the North in protected situations.

NEGUNDO—Negundo Maple, Box Elder (See *Acer Negundo*)

NYSSA—Sour Gum

Cornaceæ

N. sylvatica. [Syn. *N. multiflora*.] (TUPELO, PEPPERIDGE, BLACK GUM, SOUR GUM.) Med. A picturesque tree, growing naturally in swamps and wet places where they grow to be quite large. The upper branches are often crooked or kinky, and old specimens have a drooping of the lower limbs which give them a peculiar appearance. The foliage is leathery and as glossy as if it were varnished. They are rather difficult to transplant.

PAVIA (See *Æsculus*)

PERSICA—Peach (See *Prunus*)

PLATANUS—Plane-tree, Buttonwood

Platanaceæ

P. Occidentalis. (BUTTONWOOD, BUTTONBALL, AMERICAN PLANE TREE, also wrongly called SYCAMORE.) Lg. Of broad, round top form and massive appearance; very large trunk. Bark on the trunk is brown while on the branches there are patches of grayish green and sometimes creamy white. This variation is extremely effective in winter. The most massive and one of the most

picturesque of the native North American trees. Where successfully grown, it is an excellent street and park tree.

P. orientalis. (ORIENTAL PLANE OR BUTTONWOOD.) Lg. This species resembles in form the American Plane, with usually a very broad, round head on a comparatively short trunk. Bark is of a dull grayish or greenish white. One of the finest avenue trees wherever it is thoroly hardy. A good tree for smoky locations.

POPULUS—Poplar, Aspen

Salicaceæ

The Poplars are a very important class of trees, especially in the prairie states of the Middle West where their rapid growth makes them popular for many purposes. They thrive in almost any soil. For shelter belts they are very useful because of their rapid growth and great hardiness. They are also useful for temporary shelter for other trees and should always be found in mixed plantings where prairie forestry is practised. They are not long lived trees as compared with the Elm, Oak, etc., but their rapid growing propensity make them indispensable. Even in the East, they are very often used as street trees and are not only useful for this purpose but are symmetrical and ornamental as well. They are cheerful trees because of their tremulous foliage which rustles with the slightest breeze. In this they hold a unique place and offer several varieties which are desirable upon the lawn to give lightness to the effect.

P. alba. (WHITE POPLAR, ABELE.) Lg. A much branched tree with whitish bark on the young branches. The foliage is also a silvery gray beneath. A very effective species.

var. **Bolleana.** (BOLLE'S POPLAR.) Lg. A tall, narrow topped tree with cottony leaves, introduced from Turkistan. Somewhat resembles the Lombardy Poplar. The foliage is glossy green above and silvery beneath.

var. **nivea.** [Syn. *P. argentea.*] Med. The commonest and hardiest type of the Silver or White Poplar. It is sometimes called Silver Maple from the resemblance of the foliage to that of the Maple. In ornamental planting it is particularly useful on account of the striking foliage effect. The under side of the leaves are a clear silvery white, contrasting remarkably with the dark green of the upper surface. When the wind plays in the foliage, it produces a most striking effect. It should not be used as a single specimen but in groups or with other shrubbery. Has been found of great value in farm and prairie forestry; as it suckers from the root, it helps to establish a forest condition quickly.

P. balsamifera. (BALSAM POPLAR, TACMAHAC.) Lg. A rapid growing, native tree, with broad, heart-shaped foliage. The dull whiteness of the under side of the leaves affords a pleasant contrast in its foliage.

var. **candicans.** (BALM OF GILEAD.) Lg. The best known variety of this species. Very different from the Balsam Poplar in growth and it has none of the pyramidal or spiral-like tendency of that type, but usually makes a broad and irregular spreading top. The Balm of Gilead makes a good street tree and it is probably the best of the Poplars for shade. Well grown trees have the darkest and richest foliage of any common Poplar and this character makes the tree valuable in heavy groups about the border of a place. The well known fragrance of its resinous buds gives to it its common name. Not adapted to smoky and dusty locations.

P. deltoides. [Syn. *P. monilifera*, *P. Canadensis.*] (COTTONWOOD.) Lg. Has long been a popular tree in the Western States, particularly in the prairie sections. It is probably the best known and most planted of any of the Poplars. Its greatest value is in its extreme hardiness and rapid growth. A well grown specimen makes a noble tree, spreading its large branches far and wide. It grows rapidly in almost every soil. Of late years, the following form, var. *Carolinensis*, has been rapidly superceding the Cottonwood both for ornamental and forestry planting.

var. **aurea.** [Syn. *Van Geertii.*] (VAN GERT'S GOLDEN POPLAR.) Med. This is one of the best, yellow-leaved trees and generally holds its color thruout the season. It has handsome, clear golden yellow, glossy foliage. One of the finest trees for contrast of foliage with other trees.

var. **Carolinensis**. [Syn. *P. Carolinensis*.] (CAROLINA POPLAR, RUSSIAN POPLAR, NORWAY POPLAR.) Lg. A very distinct tree in habit of growth and making a straight, upright, somewhat pyramidal head. Altho introduced from Europe, the Carolina Poplar seems to be a more thrifty and desirable tree in the Northwest than its nearest relative, the Cottonwood. It is of extremely rapid growth, straight and regular in habit, which fact makes it particularly desirable as a quick growing street tree. The foliage is large, thickly borne, bright and glossy, and the constant movement of its leaves gives it an air of cheerfulness. It grows rapidly and in almost every soil, and yet it possesses strength and durability which most of the Poplars lack. The rapid growth of the tree gives an appearance of luxuriance wherever used. For city planting it is superior to most of the other Poplars as it withstands the effect of smoke and dust much better. These same elements make the Carolina Poplar a superior tree for planting in the shelter belt or forest plantation; mixed with the Maple, Ash, Elm and Willow, an ideal forest condition is very rapidly produced. We sell hundreds of thousands of this variety annually for shelter belt planting.

P. laurifolia. [Syn. *P. balsamifera* var. *laurifolia*, *P. certinensis*.] (CERTINENSIS POPLAR.) Lg. A native of Siberia and a hardy tree of very rapid growth, somewhat resembling the Cottonwood; described in Eastern catalogs as being a superior tree to the Cottonwood for the Northwest. With us, however, it has not proved as satisfactory as the Carolina Poplar or Cottonwood. But in some sections, it is reported as a very desirable tree. Its effect in the landscape is different from the other Poplars. Its leaves stand out more horizontally and are borne upon strong, erect shoots almost at right angles to the branch, and at some distance, therefore, presenting only their ruffled edges to the eye.

P. nigra var. **Italica**. [Syn. *P. fastigiata*.] (LOMBARDY OR ITALIAN POPLAR.) Lg. A unique and conspicuous tree on account of its erect columnar form. It is one of the characteristic trees of Lombardy from whence it derives its name. An extremely rapid grower and, for certain purposes in landscape gardening, an indispensable tree. It is remarkably striking and picturesque when grouped with other trees in order to produce an irregular sky-line. The modern culture of this variety does not allow the side branches on the trunk to be taken off but encourages branching clear to the ground, and it is certain that a less stiff appearance is produced in this way.

PRUNUS—Plum, Cherry, Peach, Apricot, Almond

Rosaceæ

This genus furnishes probably more flowering trees and shrubs for ornamental purposes than any other. They are nearly all small or medium sized trees but furnish a wide variation of coloring and flowering season. Numerous varieties naturally arrange themselves in groups as is observed below. This is the classification adopted by Bailey's Cyclopedia of American Horticulture.

SUBGENUS I. Plums and Apricots.

P. Americana. Sm. The well known native plum common thruout the Mississippi watershed. It is a small, spreading tree with twiggy branches; a desirable species for planting in thickets. This type gives us many of our best commercial plums for northern culture. It is also a very ornamental tree, particularly desirable for its great mass of white bloom which appears before the leaves.

var. **nigra**. [Syn. *P. nigra*.] (CANADA PLUM.) This is also a native tree of the extreme North and has a number of cultivated varieties grown for fruit. It is probably a more showy tree than *P. Americana* and blooms considerably earlier. The flowers are larger and are borne on slender, dark red pedicels. Has good foliage and in every way is a fine ornamental tree.

P. cerasifera. [Syn. *P. Myrobalana*.] (MYROBALAN PLUM, CHERRY PLUM.) Sm. This variety is extensively used as a stock upon which to graft the commercial plum and is best known in that connection. It, however, is a tree of some ornamental merit.

var. **atropurpurea**. [Syn. *P. Pissardi*.] (PURPLE-LEAVED PLUM.) Sm. A handsome form with purple leaves and dark, wine red fruits. It is one of the best of all small purple leaved trees, holding much of its color thru-

out the summer. The best color is secured on the strong growths and therefore it is well to head the trees back frequently.

P. siberica. (RUSSIAN APRICOT.) Sm. A small tree of ornamental value where it is successfully grown. It is, however, more regarded as a fruit than as an ornamental tree.

SUBGENUS II. Cherries.

P. avium. (SWEET CHERRY, MAZZARD CHERRY.) Med. This species furnishes us many of our orchard varieties, many of which are of well known ornamental merit. Where they are hardy, they combine usefulness and ornament in a striking manner. In size they range from medium to tall according to variety. The flowers are borne in clusters on lateral spurs.

P. Mahaleb. (MAHALEB CHERRY, ST. LUCIE CHERRY.) Sm. A small slender tree with light green, roundish leaves. The flowers are small, white and fragrant, borne in terminal umbels. Extensively used as a grafting and budding stock for the commercial orchard cherry.

P. pumila. (See under head of Shrubs.)

SUBGENUS III. Wild and Bird Cherries.

P. serotina. [Syn. *Cerasus serotina.*] (WILD BLACK CHERRY.) Lg. A native tree of fine spreading tho symmetrical form, ornamental at all seasons of the year, especially so when in blossom. It is a native tree and hardy in Minnesota. The white flowers are borne in long, loose racemes, appearing when the leaves are nearly full grown. Valuable as an ornamental tree and also of great value for the lumber it produces. Next to the Black Walnut, it is said to be the most valuable wood. It is a fine forest tree and in fact grows best when used in mixed plantings. This species should receive more attention from those planting shelter-belts and forest areas in the Northwest.

P. Virginiana. (CHOKE CHERRY.) Sm. Usually a bush but often makes a small tree under cultivation. A native species in the North and of much ornamental merit. The white flowers in May are borne in short compact panicles. Its perfect hardiness and willingness to grow on poor soil makes it indispensable in the North.

SUBGENUS IV. Almonds and Peaches

P. Amygdalus. [Syn. *A. communis.*] (FLOWERING ALMOND.) Sm. A peach-like tree with gray bark. The flowers are large, one inch and more across. They are borne singly and appear before the leaves; very conspicuous. There are double flowered, white flowered and variegated leaved forms, also weeping forms. There is also a shrub called Flowering Almond which should not be confused with this species.

P. Persica. (PEACH.) Sm. The Peach offers a number of interesting and highly ornamental varieties. They include double flowered, white flowered, red flowered, purple leaved and variegated leaf forms. Like other Peaches of this group, they are particularly ornamental for their flowers.

PTELEA—Hop Tree

Rutaceæ

P. trifoliata. (HOP TREE, WAFER ASH.) Sm. A very choice, native lawn tree that should be more used. It makes a loosely branched tree with round head. The foliage is dark green, lustrous above and pale below. Adorned in autumn with numerous clusters of light green fruit pods. The leaves are trifoliate and of very handsome appearance in the mass. When bruised, the leaves exhale a pleasant hop-like odor. This is also noticeable in the seeds.

var. **aurea.** (GOLDEN HOP TREE.) Sm. One of the showiest, golden foliaged trees under cultivation. The peculiar glossy surface of the foliage gives an appearance as tho the leaves had been varnished. It is one of the highest colored, golden foliaged trees under cultivation that retains its color thruout the summer. White flowers in June, not conspicuous

PYRUS—Apple and Crab

Rosaceæ

This large and interesting genus furnishes us many valuable ornamental varieties. In it are also found the apples of commerce and the pears. Very few are of the latter are of ornamental merit.

P. baccata. (SIBERIAN CRAB.) Sm. to Med. A small spreading tree with compact crown. Flowers are usually white. The fruit is yellowish tinged with red, and about the size of a cherry. Extremely hardy. Has received considerable notice for its use as a hardy, grafting stock for the North. There is considerable variation in the color of both fruit and flowers. In general appearance it is very much like *P. floribunda* but is much hardier.

P. coronaria. (WILD CRAB APPLE, SWEET SCENTED CRAB.) Sm. A low bushy tree, with stiff, crooked, thorny branches. In May it bears very ornamental, sweet scented, rosy red or bluish flowers. This is mostly indigenous in the Eastern and Central States while *P. Ioensis* belongs more to the West.

P. floribunda. (FLOWERING CRAB.) Sm. This variety bears exceedingly beautiful, deep rich red flowers. They are produced in great profusion in May and are followed by small red fruits about the size of a pea. One of the best early spring flowering trees of small size. Often it is only a shrub.

P. Halliana. [Syn. *P. Parkmanii*.] Sm. A compact grower with dark green foliage which it retains very late. In April its half double, rose colored blossoms appear. They are equally attractive in bud and flower. One of the handsomest of the flowering apples.

P. Ioensis. [Syn. *P. coronaria* var. *Ioensis*.] (WESTERN WILD CRAB APPLE OR PRAIRIE STATE CRAB.) Sm. A small growing tree found wild in the lowlands of the Mississippi valley. It is not in cultivation but the following variety has attained consideration popularity as an ornamental sort.

var. **Bechtel's Flowering Crab.** Sm. One of the most ornamental varieties in pyrus group, and also one of the hardiest. Originated in Iowa. It is a better grower than the parent type, with good foliage. The flowers are double and very beautiful. They are a delicate blush or shell pink color and highly perfumed. This variety should appear in every collection where it is hardy.

P. sorbus. (MOUNTAIN ASH.) See Sorbus.

QUERCUS—Oak

Cupulifera

About 300 species of Oaks are known distributed thru the colder and temperate regions of the temperate hemisphere and in the mountains of the tropics. Almost all species are tall or medium growing trees, tho they often become shrubby in high attitude and also as they approach the western prairies. The value of the Oak as an ornamental and street tree has become more apparent each year and they are being more used for all the purposes of ornamental planting. It is true they are mostly rather slow in growth but their absolute hardness and high ornamental value makes this of minor importance. Except in few cases, quicker growing and shorter lived trees may be planted with them to help fill the space until they have attained some size. The Oaks must be nursery grown to transplant successfully; seedlings from the forest do not have sufficiently strong root system to stand the shock of transplanting. *Q. macrocarpa* is probably the best variety for all purposes in the North. Oak leaves are always beautiful. They have many shades of green, and are in many sizes and shapes. In many Oaks, the leaves have a handsome pink or crimson color when unfolding, and many of them assume brilliant autumnal tints.

Q. alba. (WHITE OAK.) Lg. The White Oak, like the *Q. macrocarpa* to which it is nearly related, is one of the noblest of northern trees. It is a beautiful park tree where space can be allowed for its full development. It has stout, spreading branches which form an open head. The bark is light, gray. The foliage becomes bright green at maturity and in the autumn assumes beautiful, deep vinous red or purple color.

Q. bicolor. (SWAMP WHITE OAK.) Lg. A good Oak for low places. It forms a narrow, round top, open head. The bark is grayish brown and scaly. Leaves dark, dull green above.

Q. coccinea. (SCARLET OAK.) Lg. A beautiful, native, ornamental Oak of rather variable form and foliage, but mostly follows the type as described. It has gradually spreading branches, forming a round topped, rather open head. Foliage bright green and glossy above, light green beneath. Especially valuable for its brilliant scarlet fall coloring. Grows well in dryest situations.

Q. ilicifolia. [Syn. *Q. Banisteri*, *Q. nana*.] (BEAR OAK.) Sm. A low growing tree or large shrub, intricately branched and of spreading habit. Not the Shrub Oak of the Northwestern woods but fills a similar place in the Eastern States and is quite a distinct variety. Grows naturally on dry, rocky soils and forms dense thickets.

Q. imbricaria. [Syn. *Q. palustri-imbricaria*.] Med. A beautiful Oak of symmetrical habit with handsome, glossy foliage which turns a russet red in the fall. This variety is in reality a hybrid. It has slender and somewhat pendulous branches; pyramidal in habit when young but producing a round top when old. Foliage oblanceolate, giving a generally willow-like appearance to the tree. A handsome, unique variety that is much more successful in the North than *Q. Phellos*.

Q. macrocarpa. (BURR OAK, MOSSY CUP OAK.) Lg. One of our finest, native, ornamental Oaks, and a magnificent tree in every location. It forms a splendid, broad headed tree, and altho the branches are spreading and picturesquely diverse in their growth, the tree when on good soil is very uniform in general appearance. Makes a fine street or avenue tree. It is very rough barked, bark being of a light brownish gray and rough clear out to the new wood. Very picturesque in winter, especially as its leaves do not hang on as with some of the other species. The foliage is a light, shining, bright green, and takes on a dark bronze color in the autumn. Like the White Oak, it has a very long tap root.

var. **olivæformis.** Med. Approaches *Q. macrocarpa* in character but very distinct. The acorns are larger and longer than they are wide. The leaves are deeply pinnatifid.

Q. Marilandica. [Syn. *Q. nigra*.] (BLACK JACK OAK.) Med. A medium size tree with large, heavy, dark green leaves, and quite small acorns. It has short, spreading branches and forms a narrow, round top, often irregular head. A handsome tree and particularly fine for its foliage. Is better known as *Q. nigra* but this name really belongs to the Water Oak which is only successful in the South.

Q. palustris. (PIN OAK.) Lg. A handsome tree, especially when young. Of late years has been much used in the East for avenue planting. The leaves are deeply pinnate, sometimes almost to the midrib. The foliage turns a bright red in autumn. It is a fibrous rooted tree and transplants well. Branches are rather short and spreading, forming a symmetrical, pyramidal head, tho more irregular as they become older.

Q. pedunculata. [Syn. *Q. robur*.] (ENGLISH OAK.) Lg. This differs much in foliage from our native variety. The tree makes a round headed specimen, with stout, spreading branches. The leaves are long and much divided and do not change their color with the approach of winter. Where it is hardy, it makes a beautiful avenue tree. There are more than forty varieties of this Oak under cultivation.

var. **Concordia.** (GOLDEN-LEAVED OAK.) Med. An old but rare variety of medium growth. The oblong foliage is a bright golden yellow; very useful as an ornamental tree.

var. **fastigiata viridis.** (PYRAMIDAL ENGLISH OAK.) Med. This distinct variety grows upright in pyramidal form. Its dark green leaves remain without changing color until very late in the fall.

Q. Phellos. (WILLOW OAK.) Med. So named on account of its willow-like foliage. It has rather slender branches, forming a conical, round topped head. The foliage is a bright, lively green, turning to a pale yellow. Prefers a moist, almost swampy soil. Not as hardy in the North as *Q. imbricari*, which it much resembles.

Q. prinoides. [Syn. *Q. Chincapin*, *Q. humilis*] (CHINCAPIN OAK, DWARF CHESTNUT OAK.) Sm. A very small, spreading tree or shrub rarely exceeding fifteen feet. It has slender, graceful branches and begins bearing acorns when it is only six or eight feet high. It is a very pretty shrub for covering dry and rocky ridges.

Q. prinus. (CHESTNUT OAK, ROCKY CHESTNUT OAK.) Lg. A handsome Oak common in the Atlantic States. It forms a broad, irregular head with dark brown, ridged bark. The leaves are bright or yellowish green, paler beneath.

Q. rubra. (RED OAK.) Lg. This variety is characterized by its outspreading branches, forming a large, round top and symmetrical head. A beautiful Oak of rapid growth which in time produces a large majestic tree. The foliage turns a dark red in the fall.

Q. stellata. [Syn. *Q. obtusiloba*.] (POST OAK.) Lg. A handsome tree, of broad, dense, round head, growing naturally in dry, sandy or rocky soil. It has a grayish brown, deeply fissured bark. The leaves are broadly obovate.

Q. Texana. (TEXAN RED OAK.) Lg. A fine, tall growing tree, with an oblong, open head. Leaves almost like those of *Q. coccinea*, and the acorn similar to *Q. rubra*. It is, however, quite distinct in its general effect and a desirable variety. Has only been introduced into cultivation a few years. Indigenous as far North as Iowa and perhaps farther.

Q. velutina. [Syn. *Q. tinctoria*.] (BLACK OAK.) Lg. Slender branches, spreading gradually into a narrow, open head. The tree is of rapid growth, and flourishes in even rather dry soil. The leaves are dark, dull green, turning to dull red or orange brown in the fall.

ROBINIA—Black Locust

Leguminosae

R. Pseudacacia. (FALSE ACACIA, BLACK LOCUST.) Med. A well known and very ornamental native tree, with compound, acacia-like leaves and graceful, spreading habit. The pea-like flowers are borne in drooping racemes, white and fragrant. These are followed by two-valve, bean-like seed pods. It is a rapid growing, vigorous tree, giving ornamental effect soon after planting. Should be used in grouping rather than singly. The older wood is covered with stout, sharp thorns.

SALISBURIA (See Ginkgo)

SALIX—Willow

Salicaceae

The Willows form one of the most important classes of trees for ornamental planting in the United States. They are indigenous to nearly every part of the country; nearly all are of rapid growth and of dependable hardiness. They are adapted to a great variety of soils and many of them, while very successful even in dry locations, are particularly desirable for planting in wet, heavy soils where other trees are not a success. They are also indispensable for planting on the banks of streams and upon our western lakes. They offer a great variety in size and form, color and shape of foliage, and in the color of their bark. A number of the Willows are quite indispensable in shelter-belt planting and prairie forestry; this is particularly true of the Golden Russian Willow of which many hundreds of thousands are annually planted in connection with the Carolina or Russian Poplar in the prairie states of the Northwest.

S. alba. (WHITE WILLOW, GRAY WILLOW.) Lg. This is one of the best known and most valuable of the Willows. Forms a large tree with short and thick trunk. The branches are yellowish brown and the leaves an ashy gray and silky throat, giving a white appearance to the whole tree. Has long been popular as a rapid growing ornamental tree for lawn and street planting in exposed locations. It is also much planted for windbreaks and prairie forestry altho the Golden Russian Willow has somewhat superseded it of late years.

var. **regalis**. (ROYAL WILLOW.) Lg. A strong, sturdy growing Willow. It has characteristic, silvery gray foliage and is rich and ornamental.

S. Babylonica. (NAPOLEON'S WILLOW, BABYLONIAN WEeping WILLOW.) Med. A tree of pendulous or weeping habit, with long, slender, olive green branches. This variety has been long known to cultivation, and where it is successful, it has been often grown in cemeteries. It is of very graceful habit.

var. **dolorosa**. (WISCONSIN WEeping WILLOW.) Med. This is a variety of the above which is of particular value in the North as it is much hardier and seems otherwise better adapted to the extreme conditions of this section. It is of drooping habit tho not so pronounced as the Kilmarnock type.

S. Caprea var. **pendula**. (KILMARNOCK WILLOW.) Sm. A well known lawn tree of very pendulous habit. It is usually grafted on straight stems, four to six feet from the ground. The long, slender branches immediately turn toward the ground, giving the tree an umbrella shaped appearance.

S. elegantissima. (THURLOW'S WEeping WILLOW.) Med. Of drooping habit and more spreading than *S. Babylonica*, also hardier. It has long, pendant branches, yellowish green sometimes blotched with brown.

S. pentandra. [Syn. *S. laurifolia*.] (LAUREL LEAF OR BAY LEAF WILLOW.) Sm. An ornamental variety of upright growth, forming a round head. Bark is brownish green. Foliage is a deep shining green, closely resembling that of the Laurel. Thrives equally well on high or low ground. An especially desirable variety to plant near the water.

S. purpurea var. **Uralensis**. (RUSSIAN PURPLE OSIER.) Sm. Another variety introduced from Russia by Prof. Hansen. It is of the Osier type and is grown for basket willow purposes. Forms a small, spreading tree, with long, flexible branches. The branches are purple in color and of a pronounced drooping habit.

S. viminalis. (OSIER WILLOW.) Sm. This variety is much used for basket material. The stock we have was imported by Prof. Hansen from Russia in 1897 under the name of *S. viminalis regelis*. So far it has proved to be much hardier than the common Osier. The branches are slender and straight; the leaves beautifully silvery.

S. vitellina var. **aurca**. [Syn. var. *aurantiaca*.] (GOLDEN RUSSIAN WILLOW, YELLOW WILLOW.) Lg. This has been erroneously classed under *S. alba*. It is, however, a distinct species. At the present time one of the most planted of all the Willows and a very important tree, both from an economical and ornamental standpoint. It makes a round topped tree of symmetrical form. One of its strongest ornamental features is the bright, clear, golden yellow bark which offers a pleasing contrast wherever it is used. The catkins too are yellow in color. The variety which is now generally grown under this name is quite distinct from that to which it was formerly given. This type was brought from Russia by Prof. Budd under the name of *salix aurea* and it is superior not only for its hardness but for its ornamental features as well.

S. vitellina var. **Britzensis**. (RED BARK WILLOW.) Med. A variety fully as conspicuous and ornamental as the above. The bark turns a rich salmon red in autumn and holds its color all winter. The red coloring is more pronounced on the young growth, shading to yellow on the larger limbs.

S. vitellina var. **pendula nova**. (NIOBE WEeping GOLDEN WILLOW.) Med. A weeping or drooping form introduced from Europe by the South Dakota Experimental Station. It has graceful, drooping branches, and is of regular habit. The Station Bulletin says of it, "One of the most promising novelties in recent years as there is need of a strictly hardy, weeping willow in the North for lawns, parks and cemeteries. A beautiful tree with long pendant, bright yellow branches and red twigs. Named Niobe in allusion to the Weeping Niobe of mythology."

SORBUS—Mountain Ash

Rosaceae

The Mountain Ashes are among our most beautiful and hardy ornamental trees. Their value lies not only in their good form of growth but also in the luxuriant foliage, flower and fruit. The leaves are alternate or pinnate, giving much the same soft, characteristic appearance as with the Locust. Most of

them are hardy in the North, being chiefly inhabitants of the mountainous regions. They all have handsome foliage which usually turns orange red in the autumn. The fruits are showy and often remain on the branches if not eaten by the birds. They are not particular as to soils and are well suited for planting on rocky hillsides.

NOTE:—In many catalogs the Mountain Ashes are listed under the generic title of *Pyrus* because they are in reality part of the *Pyrus* family. However, as they are distinct from the Apple and Crab group, they should be properly placed under the sub-genus *Sorbus* as here given.

S. Americana. (AMERICAN MOUNTAIN ASH, DOGBERRY.) Med. A compact, oval headed tree, with dark green, compound foliage and showy clusters of bright red berries. It is very similar to *S. Aucuparia* but of coarser growth. Probably somewhat hardier as it is a native.

S. Aucuparia. (EUROPEAN MOUNTAIN ASH, ROWAN TREE.) Med. A round headed tree, twenty to forty feet high and occasionally more. It is ornamental all thru the season. Its compound, pinnate foliage is soft and handsome in appearance and of a fine shade of green. In May and June the trees are covered with the large flat heads of pure white flowers, four to six inches across. The individual flowers are small. These are followed by clusters of bright orange and red fruits which adorn the tree long after the frost has denuded it. It seems to be as hardy in Minnesota as *S. Americana* and is much more planted as it is a finer form.

var. pendula. (WEeping MOUNTAIN ASH.) Sm. The best tree for the North of the extremely pendulous type. The fruit and flowers are identical with *S. Aucuparia*. In habit, however, it is decidedly drooping, the branches taking an almost directly downward growth. It is usually grafted on stocks about five or six feet from the ground which gives the tree a loose, umbrella-like form. It is not as regular as the Kilmarnock Willow or the Weeping Mulberry and, in the estimation of many, it is more ornamental on this account.

S. hybrida quercifolia. (OAK-LEAVED MOUNTAIN ASH.) Sm. A hybrid variety of very distinct habit. It is a very handsome lawn tree, of dense, pyramidal form. The leaves are entirely different from the other Mountain Ashes, being entire instead of compound; dark green above and tawny beneath, deeply lobed at the base, sharply toothed toward the apex. The foliage quite resembles some of the Oaks. It is fully as hardy as the European Mountain Ash and a most desirable variety for small grounds.

TILIA—Linden, Basswood, Lime, Whitewood

Tiliaceæ

Like the Elms, Oaks and Maples, this group includes some of our best known and most valuable native trees, both for ornament and purposes of utility. They are tall growing trees, indigenous both to this continent and Europe. The fibrous inner bark is used as a tying material and particularly in the manufacture of Russian bass or bast mats; hence the common name Basswood. Both the European and native varieties are extensively planted as ornamental trees and for bee pasture. As a source of honey supply no other plant excels it, as under favorable conditions, the nectar sometimes drips from the flowers in a shower. Nearly all species are of rapid growth and not very particular as to soil. Much confusion exists in the names of the Lindens, particularly in the European varieties, largely due to the fact that a number of distinct species have been imported under the same name.

T. Americana. (AMERICAN LINDEN, BASSWOOD.) Lg. A well known, stately tree with large, heart-shaped leaves of a pleasing green color. This tree was formerly common thruout the Mississippi valley but with the general destruction of the forests and the increasing demand for its white wood for manufacturing purposes, it is becoming very scarce. A vigorous grower of pyramidal habit when young but eventually a large, round headed tree. A valuable lawn tree and should be more used for this purpose. It thrives best in moist, rich land but does well in any good soil. Few native trees in the Northern States have such large, luxuriant foliage as the American Linden; its effect when planted in groves or groups is almost tropical. With its disap-

pearance from the forest, the demand for this tree for ornamental planting is growing concurrently.

T. dasystyla. (CRIMSON LINDEN.) Med. A variety of fine form, with thick, leathery, deep green, glossy foliage, lighter on the under side. Bark of the young branches is a bright green.

T. platyphyllos. [Syn. *T. Europea*, *T. grandiflora*.] (BROAD-LEAVED EUROPEAN LINDEN.) Lg. According to the Cyclopaedia of American Horticulture, this is the species most commonly grown in America under the name of *T. Europea*. It forms a broad topped tree, with large, handsome foliage. It flowers early in the season. It is a desirable tree for either avenue or lawn planting. There are a number of varieties, including *pyramidalis*, which is an upright grower; *rubra*, bark of branches red; *aurea*, bark of branches yellow; *laciniata*, the cut-leaved form. (See *T. ulmifolia*.)

T. tomentosa. [Syn. *T. alba*, *T. argentea*.] (WHITE OR SILVER LINDEN.) Med. This is the larger "White Lime" of Europe. It forms a medium size tree with upright branches, making a rather pyramidal, compact head. The leaves are rather downy underneath and smooth above. It is particularly noticeable among other trees by its white appearance.

T. ulmifolia. [Syn. *T. Europea*, *T. parvifolia*.] (SMALL-LEAVED LINDEN.) Sm. Of slower growth and a smaller tree than *T. platyphyllos*. The leaves are small, thin, cordate, green above and silvery beneath. It is very late in flowering and is a very ornamental variety when in bloom. This is the variety we originally received from Europe under the name of *T. Europea*. It is in every way a distinct and desirable ornamental tree, particularly adapted to small grounds.

T. vulgaris. [Syn. *T. Europea*.] Lg. This species grows nearly as large as *T. platyphyllos* but the foliage is smaller and blooms later. Said to be the celebrated species of Berlin.

TOXYLON—(Syn. *Maclura*) Osage Orange

Urticaceae

T. pomiferum. [Syn. *Maclura aurantiaca*.] (OSAGE ORANGE.) Med. A North American tree that was much planted a number of years ago, particularly in the Central States. Before the advent of wire fences, it was quite popular for this purpose and where properly attended to, it made a fairly good, defensive hedge. It is a deciduous tree, with alternate leaves forming a dense growing tree with very thorny branches and bright green leaves. The inedible fruit resembles a large green orange and both fruit and foliage are very fragrant. As a specimen, it makes a very pretty tree but it is as a hedge plant that it is most used and has the most value.

ULMUS—Elm

Urticaceae

This genus furnishes us some of our most magnificent trees, including the American White Elm, which in the West is one of the finest avenue and shade trees we possess. They are all mostly tall and long lived trees and are valuable for lawn, park and street planting.

U. Americana. (AMERICAN WHITE ELM, WATER ELM.) Lg. One of the most largely used trees for street planting and as a shade tree for lawns and parks. It is the most characteristic tree of this region and one of the most beautiful. Its habit is at once majestic and graceful, and the wide spreading tree, borne usually at a considerable height on a straight and shapely trunk, affords ample shade and shelter. The American Elm varies considerably in habit and the following forms have been distinguished: "Vase form"—the main trunk, separates at fifteen to twenty feet into several, almost equal branches which diverge at first gradually, then boldly sweep outwards and form broad, flat heads. This is the most beautiful and also the commonest form. The "plume form" is much like the foregoing but the trunk is less divided and the limbs form a few feathery plumes. The "Weeping-Willow

form" usually has a very short trunk, the limbs curving outward, and slender pendulous branches forming usually a broad, round head. The "oak-tree form" is distinguished by its limbs spreading abruptly and in sharp turns, and the branches being usually less pendulous. These variations, appearing with age, render the American Elm one of the most interesting trees.

var. pendula. (WEeping AMERICAN ELM.) Med. A picturesque type of irregular growth with pendulous branches, more pronounced in their drooping habit than *U. Americana*. It is grafted upon *U. Americana* as a stock and is equally hardy. Should not be confused with the Camperdown Weeping Elm which is more pendulous and more uniform.

U. campstris. (ENGLISH ELM.) Lg. Forms an oblong, round top tree, altho sometimes spreading. This tree has been much planted in the Eastern States where it is very successful. The foliage remains green several weeks longer than that of the American Elm. It is more variable if anything than *U. Americana*, and a large number of distinct named varieties are under cultivation.

U. fulva. [Syn. *U. rubra*.] (SLIPPERY ELM, RED ELM, MOOSE ELM.) Lg. This species forms a broad, open, flat top tree with spreading branches. It is native west of the Dakotas. The reddish brown pubescence of the bud scales is conspicuous in the spring and gives it one of its common names. Very hardy but not so desirable for street planting as the American White Elm. It has much ornamental merit and is much valued for forest planting.

U. racemosa. (CORK ELM, ROCK ELM.) Med. to Lg. A valuable and picturesque species, very different from *Americana*. It is almost regular in form, with short, stout, twiggy branches. All the bark on wood two years old and older is thickly and irregularly corded. This gives it a picturesque and pleasing appearance in winter, similar to the Burr Oak except that its branches are not so irregular. The foliage is large, oval and very handsome. The seed is very large for an Elm, one-half to three-fourths inch long.

U. scabra. [Syn. *U. montana*.] (SCOTCH ELM, WYCH ELM.) Lg. A spreading European tree, with many variations, and a large number of garden varieties cultivated particularly in Europe. The following is one of the best known in this country.

var. pendula. (CAMPERDOWN WEEPING ELM.) Sm. A very beautiful pendulous tree and much used for lawn planting where it is successful. It has broad foliage of fine color. The side branches grow horizontally at first and then drooping gracefully to the ground. It is often trained to make an immense, umbrella-like arbor.

VIRGILIA (See Cladrastis)

XANTHOXYLUM—Prickly Ash

Rutaceæ

X. Americanum. [Syn. *X. Fraxineum*.] (PRICKLY ASH, TOOTH-ACHE TREE.) Sm. This is the only species indigenous or hardy in the North. There are about 140 species in the tropical and sub-tropical regions. The Prickly Ash is a small ornamental tree. The foliage is compound and quite pretty in its effect. The yellowish green flowers appear before the leaves. It is noticeable for its pungent qualities. The bark when chewed is said to cure tooth-ache. The thorns of this species are very numerous and stout. They make it a valuable variety to grow in thickets and fences to turn stock and for other defensive purposes. It should be more used than it is. It is much hardier than the Osage Orange.

CONE BEARING EVERGREENS

Coniferæ

From the standpoint of the horticulturist, the Conifers or cone bearing Evergreens take a very prominent place among the material for landscape gardening effects and in their more practical use as windbreaks. Their evergreen habit—for all except the Larches and Ginkgos are evergreen—and their conical form, especially in the early periods of life, with a branch system persisting to the base for a long time, are the elements which make them desirable. To these graces may be added the peculiar form and the striking coloring of their foliage which, in combination with deciduous trees, or in clumps by themselves, or even as single specimens, offers striking effects. The majority of the species belonging to this group are found in the temperate zone, only a few belonging to the tropical or sub-tropical countries.

The Evergreens are indispensable in some features of ornamental gardening. They are especially valuable for screens and windbreaks, for a background against which to group trees with beautifully colored leaves or branches, and for winter decoration. In fact in the Northern States the Pines, Spruces and other native Evergreens are so well adapted to the climate and soil, they are quite as important in all branches of ornamental planting as the deciduous trees and shrubs. They offer nearly as large a variety in size and form as do the deciduous varieties, and with Blue Spruce, Golden Arbor Vitæ, etc., they also present many pleasing shades of color. Some of the species and varieties listed are very low growers and should perhaps be placed in a class by themselves or listed among the deciduous shrubs; however, as there are not many of them, they are commonly classed among the other Conifers.

The Conifers are as easily transplanted as other trees if well rooted, nursery specimens are used and care is taken to keep the roots from drying. Like the Oaks and Walnuts, they do not as seedling trees produce much of a fibrous root system and nursery culture is therefore necessary to produce a tree that will transplant safely. Much disappointment has resulted from the planting of many thousands of forest seedling evergreens which are pulled from the woods of Wisconsin and northern Minnesota and sold very cheap. The importance of care in handling evergreens when dug arises from the peculiar resinous sap which does not stand the same exposure as that of most deciduous trees.

As a feature in farm, or prairie forestry, the Conifers play a most important part, and especially so as their habits and requirements are better understood. It has been demonstrated that in exposed prairie locations, Evergreens may be successfully grown in the wood lot and shelter-belt by first starting a nurse crop of the Poplars, Willows, Box Elders and other vigorous, deciduous trees. These, after two or three years growth, afford the shade and protection necessary to starting the Evergreen successfully. When the Evergreens are added and a "mixed planting" is thus established, a highly desirable "forest condition" is obtained. Mixed plantings of this kind are recommended everywhere, not only because they more closely follow nature and are therefore more successful, but are also pleasing and satisfying to the eye.

KEY TO SIZE

Lg. Trees usually attaining a height of fifty feet or more at maturity.

Med. Trees usually less than fifty feet and more than twenty-five at maturity.

Sm. Trees commonly less than twenty-five feet at maturity.

ABIES—FIR

Coniferae

The Firs are of characteristic, tall, pyramidal habit and, altho resembling the Spruces in form, they are more regularly symmetrical. They are nearly all native of the northern country and more handsome in cultivation than in their native soil. Many of the species heretofore cataloged under this head really belong in the *Picea* group. They are popular not alone for their symmetrical beauty but also because they are very vigorous and succeed upon soils not often adapted to the growing of other Conifers.

A. balsamea. (BALSAM FIR.) Lg. The best known species of this class. Being a native of northern Minnesota and Wisconsin, proves its vigor in the extreme climate of the North. It forms a slender, spiral and very symmetrical pyramidal tree. It is one of the most rapid growing trees in the Conifer group, and in mixed plantings particularly it is very valuable for windbreaks and screens. For lawn planting, either in groups or as a specimen, it lends itself to a variety of uses. The foliage is very dark green with short soft needles which have a pleasant aromatic fragrance.

A. concolor. (WHITE FIR.) Lg. A handsome species from the Rocky Mountains. One of the best Firs for hot, dry situations as this is the condition to which it is native. It has long, comparatively broad foliage, of a decided glaucous color when young and becoming pale green with age. It is a choice lawn tree, in general color somewhat approaching the Blue Spruce. In the Eastern States it is generally considered the most desirable variety of this genus.

A. Douglasii. (See *Pseudotsuga*.)

A. Nordmanniana. (NORDMANN'S SILVER FIR.) Med. to Lg. This majestic Fir from the Crimean Mountains is of symmetrical form and vigorous where it is successfully hardy. Its foliage is massive or crowded, dark green and lustrous above and silvery white below. Very conspicuous and handsome the year around. In America as in Europe it is considered one of the finest of the Silver Firs.

A. Veitchii. (JAPANESE FIR.) Lg. This species forms great forests along the coasts of Manchuria and is one of the most beautiful of the Fir trees. It is a rapid grower and highly recommended for specimen planting where it is hardy. The color of the leaves on the exposed side is bright green and bright blue on the under side.

BIOTA—Chinese Arbor Vitæ (See *Thuya*)

CEDRUS—Cedar

Coniferae

An oriental tree that is much grown in warmer parts of the United States for ornamental purposes. In the Northern States it is not successful. Should not be confused with the native Red Cedar, *Juniperus Virginiana*, or with the American Arbor Vitæ, *Thuya occidentalis*, which is sometimes known as the White Cedar.

CHAMÆCYPARIS

Coniferae

(Including *Retinispora* and *Cupressus*)

There is much confusion among nursery catalogs in this class of Evergreens. They are variously listed under the heads of *Chamæcyparis*, *Retinispora* and *Thuya*. In the American Cyclopædia of Horticulture, which represents the latest authority on the subject, the genus *Retinispora* has been united with *Chamæcyparis*. The class is best known in horticulture by its juvenile or dwarf forms and these have been the cause of the confusion in its nomenclature. Their first or juvenile leaves are very different from those of the adult plant, and thru many generations of propagation the juvenile foliage has been retained until several well fixed varieties have resulted. They resemble some species of *Juniperus* in habit and foliage but softer in effect. They are mostly natives of

Japan and are not particularly hardy in the extreme North. In many protected places, however, they are used to advantage.

C. obtusa. [Syn. *Retinispora obtusa.*] Lg. This species produces a tree of good size; in fact it is the strongest grower of its class, the foliage is fern-like, of a clear green color and of drooping and graceful habit.

var. **compacta.** Sm. A bushy grower of more solid or compact form. The foliage is like the former.

var. **nana.** Sm. The lowest grower of this class. Very dense, short foliage of extremely dark green.

C. pisifera. [Syn. *Retinispora pisifera.*] Med. A more open grower than var. *obtusa*. The form is upright, branches somewhat pendulous toward the end. Foliage light green, glaucous beneath and very feathery.

var. **aurea.** Foliage a bright golden yellow in color, the new growth being especially bright.

var. **filifera.** [Syn. *Retinispora filifera.*] A medium sized pyramidal tree of graceful outline, the ends of the branches drooping in long filaments.

var. **plumosa.** [Syn. *Retinispora plumosa.*] One of the most planted varieties in this species. Medium grower, heavily branched; foliage bright green, glaucous beneath. Stands shearing well.

var. **plumosa argentea.** Ends of branches tipped with silvery white.

var. **plumosa aurea.** A golden form in which the color of the new growth contrasts with the deeper shade of the older foliage.

var. **squarrosa.** A densely branched, bushy tree or shrub, with spreading feathery branchlets. Foliage glaucous above, silvery below. A very distinct and beautiful variety.

JUNIPERUS—Juniper

Coniferae

The Junipers are closely related to the Cypressess as is evidenced by their foliage and habit of growth. They are mostly all inhabitants of the Northern States and offer several valuable, ornamental varieties that are hardy. They are very distinct from the Spruces and Pines both in foliage and general habits. The whorled and scale-like leaves are characteristic of the genus as are also the berry-like cones. All are valuable ornamental plants and offer a variety of sizes and forms. The Junipers thrive best in sandy, loamy, moderately moist soil but grow well in rather dry, rocky and gravelly ground. They prefer sunny, open situations.

J. Chinensis. [Syn. *J. Japonica.*] (CHINESE JUNIPER.) An oriental Juniper, very good in habit, usually pyramidal. Its following varieties are the ones most planted.

var. **argenteo-variegata.** (WHITE-TIPPED JUNIPER.) Sm. One of the most ornamental members of the Juniper tribe. The foliage is a dark bluish green with white tips at the end of each twig and branch. It is of compact, columnar growth, reaching a maximum height of twenty-five feet.

var. **aurea.** (GOLDEN CHINESE JUNIPER.) Sm. Similar in form and habit to var. *argenteo-variegata*. In this variety, however, the younger growth is a bright golden yellow, the color becoming more brilliant in the full sun.

J. communis. (COMMON JUNIPER.) Med. This is a shrub or small tree of variable habit, with procumbent, spreading or erect branches.

var. **Canadensis.** [Syn. *J. Canadensis.*] (CANADIAN JUNIPER.) 4 ft. Dwarf. A low spreading or procumbent shrub, seldom growing over four feet in height. The leaves are abruptly pointed, usually incurved, densely clothing the branches with a broad, silvery green line. It is indigenous to the extreme northern regions and should prove a valuable Evergreen shrub to use for similar purposes with the *J. Sabina*.

var. **Canadensis aurea.** Very similar to the former in foliage and habit but the tips of the branchlets are a golden yellow; distinct and desirable.

var. **Hibernica.** (IRISH JUNIPER.) Sm. In many parts of the United States the Irish Juniper is the most commonly planted of the Juniper family. It is a tall, straight, formal growing tree of columnar form with upright branches and bluish green foliage. A rapid grower and thrives on damp soil.

var. **Suecica.** (SWEDISH JUNIPER.) Sm. to Med. This variety is quite similar to var. *Hibernica* but yet quite distinct. It is a higher grower and somewhat hardier. Of a lighter and more bluish color and the branches do not grow as stiff and compact as the Irish Juniper. Its general form is good and useful where columnar effects are desirable.

J. Sabina. (SAVIN JUNIPER.) Sm. A much branched shrub of spreading, irregular habit, with spreading and somewhat drooping branches. Very variable. This species is best known from the following variety.

var. **prostrata.** [Syn. var. *procumbens*, *J. prostrata*, *J. repens*, *J. Canadensis prostrata*, etc., etc.] Hardly any other tree or plant has been given such a variety of botanical and common names as this. It is undoubtedly a Savin Juniper and the Cyclopedia of American Horticulture rightly places it under this head. A unique, dwarf Evergreen of prostrate or almost creeping habit. It thrives in light and poor soil and is very suitable for rock work. One of the finest shrubs for low growing hedges that is hardy in the North, and it can be sheared closely and kept low and in good form. As it produces fibrous roots vigorously, it is very easy to transplant and as it does not naturally attain a height of more than four feet, it is easily adaptable wherever a low Evergreen is desired. The foliage is a very dark, deep rich green, very fine and compact.

J. Virginiana. (RED CEDAR.) Lg. Probably the best known species of this whole family. The Red Cedar is indigenous thruout Minnesota and the entire Northwest. It does well in dry and exposed locations, and is admirably adapted to windbreak planting, being especially valuable in mixed plantings. It is of conical form and quite regular, densely branched, the foliage being of a thick and of a rich deep green. The bark on the trunk and the branches is a pronounced reddish brown. In the fall the branches are thickly hung with pretty, little blue berries. The southern Red Cedar altho practically identical with our northern form is not hardy in the North.

var. **elegantissima.** (GOLDEN JUNIPER OR GOLDEN CEDAR.) Med. The bright golden color of the young growth makes this an extremely attractive tree and one that holds its charm in the autumn and winter months when the color is enriched to bronzy golden shades.

var. **glauca.** (BLUE CEDAR.) Sm. A choice and distinct variety, similar in habit to *J. Virginiana* but the foliage is of a rich silvery blue. It holds its color well thruout the year. One of the finest blue foliaged trees.

PICEA—Spruce

Conifera

The Spruces are that by many to be our most ornamental Evergreens and it is probable they furnish more distinct and desirable varieties than any other group, with the possible exception of the Pines. The Spruces are of pyramidal habit, more spreading than the Firs and of generally denser foliage. They offer wide variation both in height and color of foliage. The Spruces are very much planted in the West for shelter and windbreaks and are admirably adapted to this purpose. They thrive in moderately moist, sandy loam but will grow in almost any kind of soil, provided it contains enough moisture. There exists much confusion among nursery catalogs in the classification of Spruces, many of them being transposed under the head of *Abies* which should only cover the Firs. Our classification follows the Cyclopedia of American Horticulture.

P. alba. (WHITE SPRUCE.) A well known native tree and one of the most magnificent ornamental evergreens for all purposes. It forms a loosely, symmetrical tree with rather pendant branches toward the base. As a specimen tree on good soil, it is a shapely feature for any planting. For shelter-belt or other hedge purposes it is also peculiarly well adapted because of its dense foliage and its ability to retain its lower branches. Its color is a bluish green, often quite pronounced and resembling *P. pungens*. This species endures heat and drought better than most other Evergreens of true ornamental value.

P. Engelmanni. (ENGELMANN'S SPRUCE.) Lg. This species resembles *P. pungens* in general effect, the foliage coloring from bluish green to steel blue. The needles are not as long as those of the *P. pungens* and the foliage is more soft and flexible.

P. excelsa. [Syn. *P. abies*.] (NORWAY SPRUCE.) Lg. This is the most popular of the foreign Spruces and has been extensively planted, especially in the Northeastern States. It is of rapid growth and is a handsome tree with its graceful habit and dark green, dense foliage. In Minnesota and adjoining states, the native White Spruce is hardier and therefore preferable.

var. **inversa.** (WEeping NORWAY SPRUCE.) Sm. A drooping or pendulous variety, resembling *P. excelsa*; foliage rather larger than that of the species. Desirable as a novelty.

P. nigra. (BLACK SPRUCE.) Med. Like the well known White Spruce, this is a native in the Northern States. It is of variable habit, sometimes attaining quite a height but mostly of medium size. The foliage is very much darker with shorter needles. With the advance of farm and prairie forestry, the Black Spruce has been found quite a valuable species for these purposes as it is vigorous and hardy and easily obtained. It succeeds admirably in almost any soil whether wet or dry as it is naturally a vigorous root producer.

var. **pumila.** (DWARF SPRUCE.) Sm. A compact tree of very small and symmetrical form. Especially desirable for small lawns, cemetery planting, etc. In its foliage it follows very closely the Norway Spruce. A large number of dwarf varieties are cataloged but most of them are nearly identical.

P. pungens. (COLORADO BLUE SPRUCE.) Med. to Lg. This noble species from the Rocky Mountains is without doubt the most striking and ornamental of the Spruces, if not of all the Conifers. A dense growing, symmetrical pyramidal tree with stiff, pointed foliage, the needles being very thickly borne on the stem. In color the foliage is a deep green altho some specimens develop shades of blue green approaching var. *glauca*. In all specimens, the color is right pleasing.

var. **glauca.** This type of the Colorado Blue Spruce, sometimes known as Koster's Blue Spruce, has been selected and bred by nurserymen because of its extreme silvery blue foliage. In all other respects it is exactly the same tree as described above. It is the highest colored and most striking of all Evergreens for lawn planting and should be more used. The high price which these trees command is due to their rarity when grown from seed and the difficulty of grafting successfully. In Minnesota it has proved entirely hardy.

PINUS—Pine

Conifera

What the apple is among the fruits, what the Oak is among the broad leaved trees, the Pines represent among the Conifers. No other trees of the temperate zone have been of as much economic importance and they also fill a very important place in ornamental planting. The northern species, being indigenous to extreme conditions, are naturally of perfect hardiness. The Pines are habitually inhabitants of poor, sandy soils and dry situations. They are frugal by nature, nevertheless they respond to good, well drained soil, and under such conditions their rich and characteristic foliage is highly pleasing and desirable for many purposes.

P. Cembra. (SWISS STONE PINE.) Med. to Lg. A European Pine with spreading, usually short branches, forming a narrow, dense, pyramidal head. In old age it forms a very picturesque, broad, open round topped head. The needles are straight, dark green, shading to bluish white inside; a very handsome Pine, of slow growth and desirable for its symmetrical habit. Quite similar to *P. Strobus* in general character but more conical and regular in outline and compact in bud.

P. divaricata. (JACK PINE.) Med. The most northern of all American Pines. While not of as great ornamental value as most of the other Pines, the species is coming into use in the prairie states on account of its extreme hardiness and vigor. As it withstands long droughts and hot dry winds, it is a valuable timber-belt evergreen in those sections in which these conditions frequently prevail. Of rather irregular and sometimes shrubby growth. The foliage is a bright green, needles short and rather stiff.

P. excelsa. (HIMALAYAN PINE, BHOTAN PINE.) Med. to Lg. An Asiatic species somewhat resembling our native White Pine. In its native country it forms a lofty tree. It is not particular as to soil and situation but requires

space for proper development. The foliage is of a soft, silvery blue, shading to bright green on the older growth; needles long, slender and graceful. Forms a compact body with branches close to the ground.

P. flexilis. (LIMBER PINE.) Med. to Lg. Another hardy Pine inhabiting the mountain regions from Alberta to New Mexico. It grows with stout, horizontal branches, forming a narrow, open pyramid. With old age it assumes a low, broad, round topped head. Of slow, cautious growth and seems to be well adapted to planting on rocky slopes and other exposed locations.

P. Laricio var. **Austriaca.** [Syn. *P. Austriaca*, *P. nigra*] (AUSTRIAN PINE, CORSICAN PINE, BLACK PINE.) Lg. A European Pine of much ornamental merit. It makes a tall, handsome tree with broad, oval head. One of the most important Conifers for specimen or mass planting, and exceptionally good for windy exposures as well as being always desirable in the Evergreen group. Sometimes called Black Pine on account of its very dark foliage.

P. montana var. **Mughus.** (DWARF OR SWISS MOUNTAIN PINE, MUGHO PINE.) Sm. A low spreading Pine and very useful in lawn planting. In foliage it is a true Pine with stout, bright green needles of medium length. Valuable for planting on rocky ground and hillsides. Can be used in the most exposed location as it is a tree trained to stand extreme conditions.

P. ponderosa var. **scopulorum.** (NORTHERN PONDEROSA PINE, YELLOW PINE, BULL PINE.) Med. This variety of *P. ponderosa* was first brought to attention in South Dakota where it was found to be successful and much hardier than the type. It forms a stout, spreading tree with branches often pendulous. A rapid grower, its branches heavy and rough coated with bark. Foliage is dark green, the needles growing out at right angles to the twig and extremely stiff and heavy.

P. resinosa. (RED PINE, NORWAY PINE.) Lg. A well known Pine found in the Northern forests and is considered one of the most ornamental varieties. It is of vigorous growth and hardy in all situations. Forms a compact tree with long graceful needles of dark lustrous green. Its branches are stout and spreading, forming a round, pyramidal tree when young and assuming an open, round topped form with age. The Norway Pine makes a very satisfactory tree in groups with the Scotch Pine, White Pine, etc.

P. Strobus. (WHITE PINE.) Lg. Our native northern White Pine is famous as a stately and beautiful tree under a wide variety of conditions. It is tall and straight with slender, glaucous foliage, somewhat tufted at the ends of the branches. In habit it is very graceful whether kept low by trimming or allowed to grow naturally. As it bears proper "heading in" without harm its lower branches may be kept alive and thrifty by this process. It thus becomes one of our most valuable evergreens for shelter-belt and hedge planting. Mixed with other hardy evergreens like the Arbor Vitæ, a dense screen may be grown in a very few years. A long lived tree and of rapid growth in almost any soil or situation when once established.

P. sylvestris. (SCOTCH PINE.) Med. to Lg. This Pine is one of the most important timber trees of Europe. By many it is considered of equal ornamental merit with the White Pine and Norway Pine and is a very desirable tree for the evergreen group. The branches are spreading, often somewhat pendulous. A rather pyramidal tree when young, with broad and round top, often picturesque head in old age. The needles are of medium length, very rigid and of a bluish green color. It is a vigorous grower on all well drained soils and the foliage is a constant green and thrifty.

PSEUDOTSUGA—False Hemlock

Conifera

P. Douglasii. (DOUGLAS' SPRUCE, RED FIR.) Lg. The only species well known in cultivation, and in its habitat thru the mountains of western North America it is one of the tallest and handsomest forest trees. It thrives best in a porous, sandy loam, and its cultivation does not differ from that of the Spruces and Firs; of symmetrical and pyramidal habit, with regular branches and dark red brown bark. The needles are long and of a green or bluish green, varying with different specimens. A very distinct Evergreen and valuable for ornamental effects wherever it is successful.

RETINISPORA (See Chamæcyparis)

Coniferae

TAXUS—Yew

Coniferae

The best known species of Yew is *T. baccata*, the old English Yew which, with its varieties, is well known in Europe.

T. baccata. (ENGLISH YEW.) Med. A dense growing, medium sized tree, thickly branched, with dark green foliage and bright scarlet berries. It stands shearing readily and where hardy, it is a very desirable tree.

var. **aurea.** Foliage golden yellow, more brightly colored at the tips.

var. **fastigiata.** [Syn. *T. Hibernica.*] (IRISH YEW.) Of very close upright or fastigate growth. Foliage long, very dark green and glossy. Berries red.

var. **fastigiata aurea.** Young growth golden yellow.

var. **Jacksoni.** [Syn. var. *pendula.*] Branches spreading and pendulous at the tips.

T. Canadensis. (AMERICAN YEW OR GROUND HEMLOCK.) Sm. A prostrate shrub, with wide spreading, slender branches, rarely more than two feet high. The foliage is shorter and narrower and of lighter green than that of *T. baccata*, usually assuming in winter a reddish tinge. Under cultivation it is usually less straggling. Berries deep crimson and quite showy. Valuable for lawn planting in a variety of soils.

T. cuspidata. (JAPAN YEW.) Sm. A dense growing, similar to *T. baccata* but more upright and with broader foliage.

THUYA—Arborvitæ

Coniferae

Ornamental evergreen trees of narrow, pyramidal habit, with much ramified branches; the branches are arranged frond-like. They are all of regular symmetrical habit, indispensable in formal gardening and some of them are very beautiful and desirable as specimens. The well known *T. occidentalis* is one of the hardiest and best evergreens for shelter-belt and timber planting in the North. Their numerous garden forms vary greatly in habit and color of foliage. Many of them are particularly adapted to hedge planting as they stand pruning well and soon form a very dense hedge. They thrive in a great variety of soils and are easily transplanted.

T. gigantea. Lg. A native of Alaska. It has short, horizontal branches, often pendulous at the edge, forming a narrow pyramid. Trunk coated with cinnamon red bark. Bright green foliage.

var. **aurea.** A form of the above with yellow tipped foliage.

T. occidentalis. (COMMON AMERICAN ARBORVITÆ also erroneously called WHITE CEDAR.) Med. The best known and most valuable of this genus. As a specimen in good soil, it often attains a height of sixty feet and has been much used for telegraph poles. In cultivation this species is best known from its widespread use as an ornamental hedge. It is of a bright, healthy green with an abundance of foliage and of natural pyramidal shape adapting it to hedge purposes. As it stands severe pruning, it is easily maintained in a low hedge of almost any desired height or shape. Being one of the few Evergreens that will grow in wet soils, this becomes a valuable species for many conditions of ornamental planting. It is also a very handsome specimen Evergreen if trimmed properly at the crown so as to thicken up the branches and retain the lower ones. For shelter-belt planting and prairie forestry the American Arborvitæ is without a rival for its vigor and hardiness; either alone or mixed with Evergreens or deciduous trees, it is indispensable for these purposes.

var. **alba.** [Syn. var. *albo-spica*, var. *Queen Victoria.*] (SILVER TIPPED ARBORVITÆ.) Med. A pyramidal grower. The ends and edges of the foliage are tipped with white.

var. **aurea.** (GOLDEN ARBORVITÆ.) Med. Broad, bushy grower

with deep yellow foliage. Var. *Burrowii*, Douglas' Golden and Meehan's Golden are similar forms with yellow foliage.

var. *Douglasii*. [Syn. var. *filifolia*.] Med. A bushy form with long and slender, sparingly ramified branches, nodding at the tips. In habit of growth it somewhat resembles the Pyramidal Arborvitæ but it is more feathery in appearance. In color it comes both in green and golden variegation, both being very distinct and pronounced.

var. *Ellwangeriana*. [Syn. *Tom Thumb*.] Sm. A very low, broad pyramid of compact foliage, dark green and graceful.

var. *globosa*. [Syn. var. *compacta*.] Sm. Of low globular form, with slender branches of bright green foliage.

var. *Hoveyi*. (HOVEY'S GOLDEN ARBORVITÆ.) Sm. A very pretty, dwarf Arborvitæ of compact form, with bright golden foliage.

var. *lutea*. (GEORGE PEABODY'S GOLDEN ARBORVITÆ.) Sm. to Med. Of pyramidal form with bright yellow foliage.

var. *pumila*. Another of the dwarf Arborvitæ; rather conical at the base, tapering toward the top.

var. *Vervœneana*. Of smaller and denser habit than the type. Branches slender with yellowish foliage, bronzy in winter.

var. *Wareana*. [Syn. *T. Siberica*.] (SIBERIAN ARBORVITÆ.) Med. A very desirable type of the Arborvitæ. Forms a dense, rather conical body of very symmetrical habit and pretty either in groups or singly. The foliage is stiff and heavy and of a deep rich green color.

T. orientalis var. **pyramidalis**. (PYRAMIDAL ARBORVITÆ.) Sm. to Med. A densely branched Arborvitæ, of perfectly columnar form. One of the most remarkable Evergreens in respect to its symmetry. Like the Irish Juniper, it holds its perfect fastigate shape thruout life without trimming or pruning. It is perfectly hardy and will succeed anywhere that the American Arborvitæ grows. A very valuable variety for many kinds of ornamental planting and a rich and attractive variety wherever columnar effects are desired.

TSUGA—Hemlock, Hemlock Spruce

Conifera

The Hemlocks are often listed with the *Abies* or *Picea* group. They are, however, properly classed by themselves. There are probably no more beautiful Conifers than these, and they must be ranked among the most ornamental and useful trees for park planting. They do not have the stiff, formal appearance of many of the Conifers but are graceful and stately at the same time. Only the following three species are hardy in the northern half of United States.

T. Canadensis. (COMMON HEMLOCK OR HEMLOCK SPRUCE.) Lg. The general description above should really be applied to this species as it is the best known and most commonly planted in the Northern States. It is one of our finest native Evergreens; of pyramidal habit, attaining to seventy feet in height and sometimes more. The branches are a delicate and somewhat pendulous. The dark green foliage is tufted, yet light in appearance. Makes a handsome specimen tree and is always desirable in the Evergreen group. Its soft appearance contrasts favorably with the rugged growth of other Evergreens, like the Scotch and Ponderosa Pine. There are number of distinct varieties of this species found occasionally in cultivation. *Albo-Spica* has branchlets tipped with white; var. *compacta* is of dwarf, conical habit; var. *gracilis*, with slender drooping branches; var. *pendula*, a flat topped form, with spreading branches and drooping branchlets.

T. Hookeriana. [Syn. *T. Mertensiana*.] ALPINE HEMLOCK OR BLACK HEMLOCK.) Med. A beautiful variety, native of British Columbia. It is of general conical form, with slender, pendant branches, usually forming an open pyramid. The foliage is dense, of a rich bluish green. Some specimens color up almost as well as the Blue Spruce. A very distinct and valuable species. Has been frequently confused with *T. Mertensiana*.

T. Mertensiana. [Syn. *T. heterophylla*.] (WESTERN HEMLOCK.) Lg. Native range from Alaska to Idaho and Montana. Resembles the *T. Canadensis* but is very distinct. Short, slender, usually pendulous branches, forming a rather broad head when young but narrow and pyramidal with age; foliage dark green.

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Achillea The Pearl—A fine border plant. (See page 9)



Artemisia Frigida—Silky Wormwood—With its beautiful feathery foliage this makes a most desirable plant in the hardy border and a good "edging" to put in front of flowering plants. (See page 14)

All Illustrations Reduced Without Reference to Relative Size



Arundinaria—Ribbon Grass. On railroad station grounds. (See page 14)



Sweet William—Dianthus Barbatus. A striking and distinct variety of this family. (See page 21.)



Coronilla Varia—Crown Veitch. (See page 20)

All Illustrations Reduced Without Reference to Relative Size



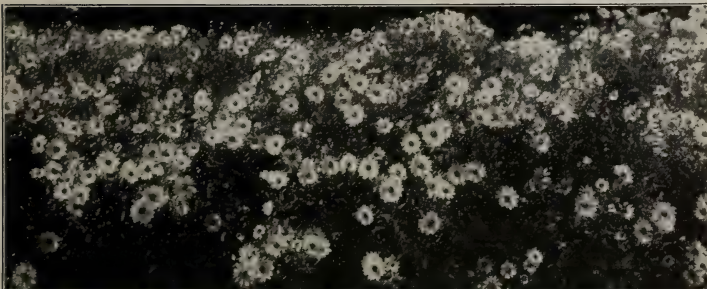
Shasta Daisy—*Chrysanthemum*. (See page 19)



Boltonia Latisquama—A beautiful perennial flower resembling the Aster and Daisy families. (See page 16)



Hardy or Grass Pinks—*Dianthus*. Beautiful as a vase flower. (See page 21)



Pyrethrum Uliginosum—Autumn blooming Daisy. An elegant plant for the border and garden. (See page 45)



Delphinium—Larkspur. One of the new hybrids. (See page 20)



Lily o' the Valley—Very hardy.
(See page 20)



Purple Barberry for hedge purposes. A distinct type of foliage color is offered in this Barberry. It is being used more each year for hedge planting in the West. (See page 57.)

All Illustrations Reduced Without Reference to Relative Size.

Two of the Improved Hardy or
Grass Pinks—*Dianthus*.
(See page 21.)



A background of blue Larkspur—*Delphinium Formosum*. One of the most striking of the hardy perennials. The blue of the flowers, like the blue of the sky, takes white in the photograph. (See page 20)

All Illustrations Reduced Without Reference to Relative Size.



Dicentra—Bleeding Heart. A young plant in bloom. Graceful, striking, and a unique flower in its class.



Aquilegia—Columbine. A hardy flowering plant. Blossoms about one-half size. (See page 13)

All Illustrations Reduced Without Reference to Relative Size



Gaillardia Grandiflora.—A splendid type of the hardy herbaceous, flowering plant. With its rich shade of orange, yellow and red, its free blooming habit, size, vigor and clean stems, it makes a most desirable plant for the hardy border. (See page 25)



Gaillardia.—A darker type of flower than shown in the above photograph. There is also considerable variation in the arrangement of the petals. (See page 25)



Funkia—Plantain Lily. A highly desirable plant for mixed borders. (See page 25)

All Illustrations Reduced Without Reference to Relative Size.



Hemerocallis—Day Lily. (See page 28.)



Japanese Iris—Robert Craig. (See page 30.)



Hibiscus—Crimson Eye. (See page 29.)



Japanese Iris—Alexander. (See page 30.)

All Illustrations Reduced Without Reference to Relative Size.



A row of Japanese Irises, showing the splendid effect they give as a border plant. They are indispensable in all garden work, absolutely hardy and add a wonderfully subtropical effect wherever used. (See page 30)



Eupatorium Frazerii. (See page 24)



Iris—Commodore Perry. (See page 30)

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Phlox—Subulata Alba in the nursery. One of the finest carpeting plants. Makes a beautiful border for many purposes. (See page 41)



Herbaceous Peonies in bloom. A nearer view of the group shown on page XIII.
(See page 36)

All Illustrations Reduced Without Reference to Relative Size.



This large field of Tiger Lilies in our Nurseries gives an idea of the popularity of these very old flowers. Used in a mixed border, they are quite indispensable with their tall, commanding spikes, surmounted by heads of tawny flowers. (See page 33.)



THE CHINESE BELL FLOWER
A HARDY PERENIAL

Platycodon Grandiflora—Chinese Bellflower. (See page 43.)

All Illustrations Reduced Without Reference to Relative Size



Hybrid Phlox in the nursery row. Several varieties. (See page 41.)



Peony Delicatissima. (See page 37.)



Peony Rubra. (See page 39.)

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A group of herbaceous Peonies on the lawn, showing the gorgeous display of color when in bloom. The luxuriant foliage is also a desirable feature in the shrubbery group.
(See page 36.)



Peony—Festiva
Maxima.
(See page 37.)



Peony—
Madam Chat-
enay. (See
page 36)



Peony—
Duke of Well-
ington. (See
page 37)



Hybrid Phlox—Tall pink varieties. (See page 41.)

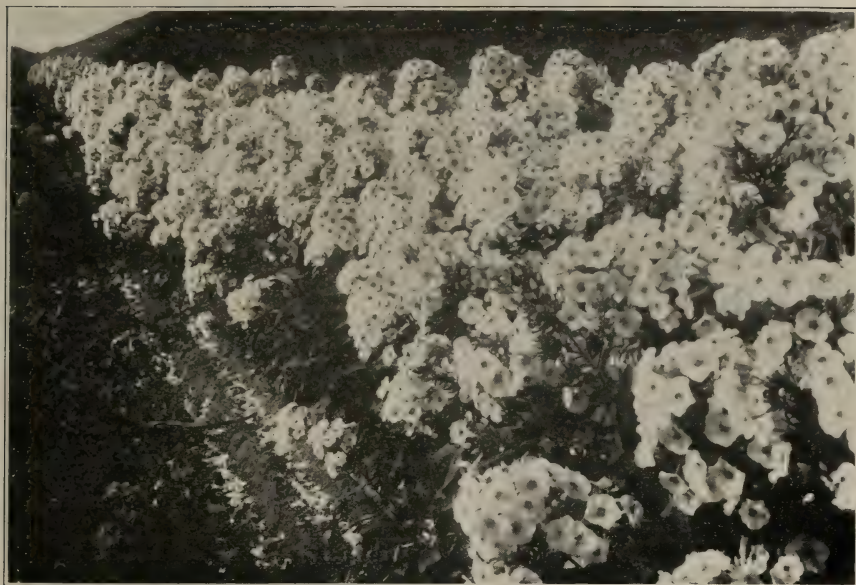


Japanese Irises—Enperor and Alexander.
(See page 30.)



Peony—J. Discaine. (See page 36.)

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Hybrid Phlox—A striking photograph in the nursery. Each variety is grown entirely separate. (See page 41)



Dicentra—Bleeding Heart. A nearer view of the blossom. The brilliant red of the upper part of the flower is not brought out in the flat color of the photograph. (See page 21.)



Section of herbaceous field devoted to hybrid Phlox. We grow a large assortment.
(See page 41)



Pyrethrum Roseum—One of the most delicate of all pink flowers.
Very desirable. (See page 45)

All Illustrations Reduced Without Reference to Relative Size



Polygonum Cuspidatum—One of the most rapid in its growth of all herbaceous plants Hardy in this latitude. This photograph shows the young growth in early summer. Compare with picture on next page. (See page 44)



The old fashioned Hollyhocks with their many modern variations are quite indispensable in all gardening. They are listed under their botanical name *Althea* on page 11.

All Illustrations Reduced Without Reference to Relative Size



Peony Grandiflora. (See page 37)



Helianthus—Orange Sunflower. (See page 28)

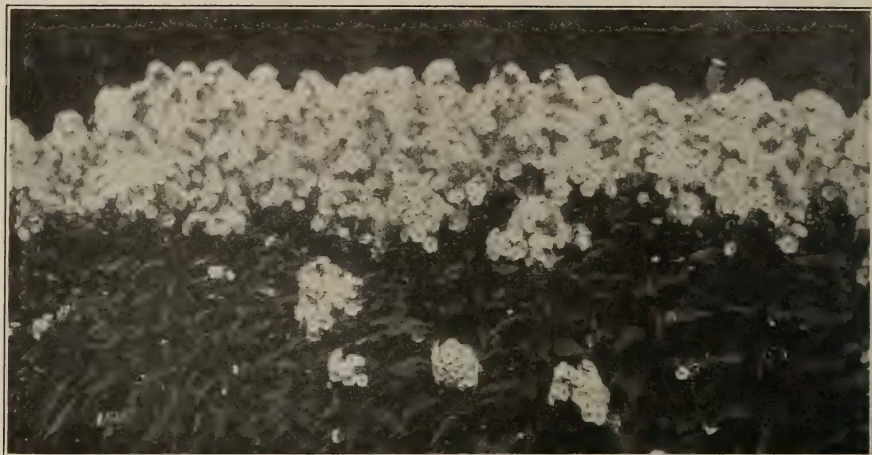


Polygonum Cuspidatum—Same border as shown on preceding page but taken later in the summer. A six foot man stands among the foliage. A most desirable plant where a high annual screen is desired. Its tropical foliage is unsurpassed in effect. (See page 44)

All Illustrations Reduced Without Reference to Relative Size



Ranunculus—Double Buttercup. This species is of great value in certain situations as it is very vigorous as well as hardy. Its beautiful, rich yellow flowers are especially handsome in the mass where it is grown as a border plant. It is also desirable when mixed with other plants where variety of color is desired. (See page 45)



Phlox—Tall hybrid varieties. (See page 41)



Mock Orange—Philadelphus. Young plants blooming in the nursery row. (See page 66).



Rosa Setigera—Michigan or Prairie Rose. From this variety has sprung the Gem of the Prairie, Queen of the Prairie, and other roses of that class. It is a beautiful variety in itself for the shrubbery group. (See page 71.)



Herbaceous Peony plant in bloom. (See page 36)



Yucca Filamentosa. A splendid plant for tropical effect. The tall spikes of creamy white flowers in early summer command instant attention wherever it is planted. (See page 52.)

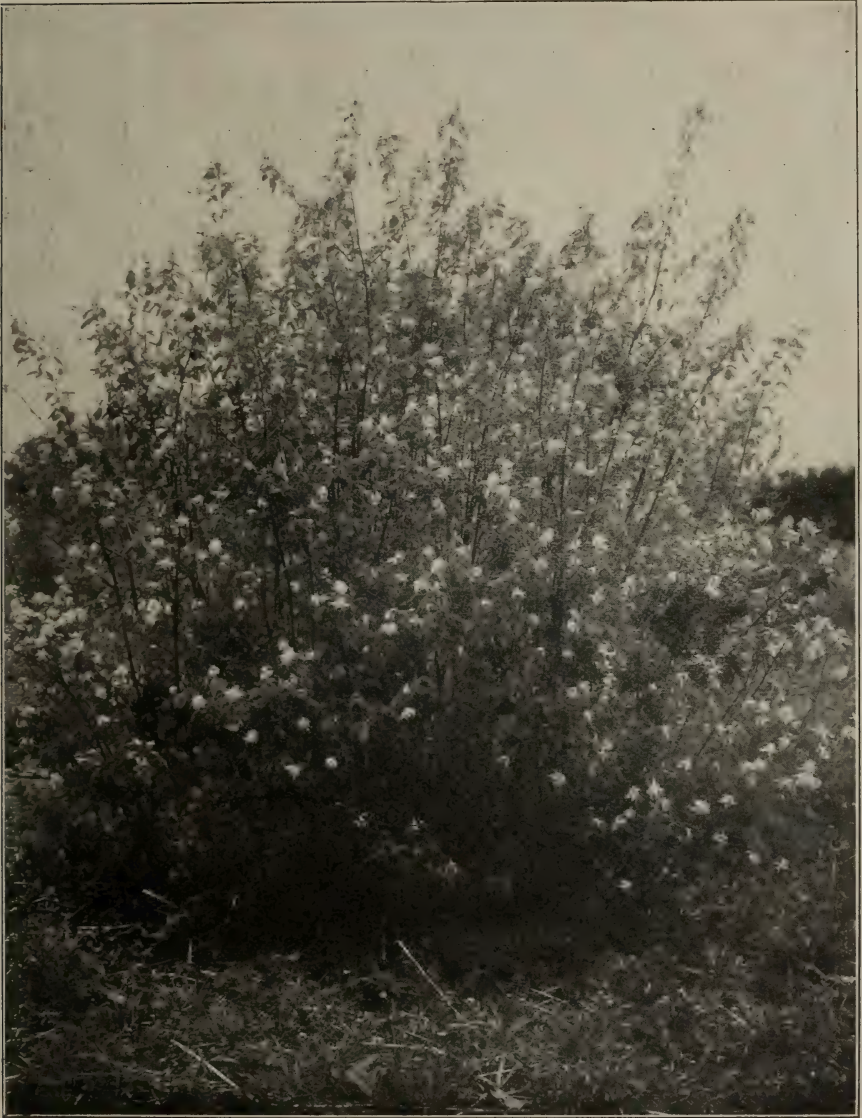


— *Rudbeckia Grandiflora*—Golden Glow.
(See page 46.)



The Jewell Arboretum. Where all the different varieties of hardy shrubs are tested. Shows a large assortment where individual specimens stand out in winter without protection.

All Illustrations Reduced Without Reference to Relative Size.



June berry—*Amelanchier Botryapium*. The Juneberry is being strongly advocated for planting as furnishing food for song birds. Most of them are very fond of its fruit which indeed is of a very pleasing flavor and, when ripe, lends itself readily to the culinary art, or as fresh fruit for the table. It is a very pleasing ornamental shrub, covered with a wealth of bloom in early spring.

(See page 55)



Black Elder. No more handsome shrub than this to be found anywhere. It should be used in every planting. (See page 64.)



Branch of the *Prunus Triloba*
in bloom. (See page 67.)



Peony *Artemise*. (See page 36.)



Buckthorn—*Rhamnus Catharticus*. A universally popular hedge shrub. Stands shearing well and is proving itself hardy in the northern states. (See page 68.)



Section of Buffalo Berry Branch, showing its wonderfully prolific habit.



Deutzia Gracilis—(See page 61)

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Hardy Periwinkle—*Vinca Minor*. (See page 52.)

Lonicera Tartarica—Upright Honeysuckle.
A flowering branch. (See page 65.)



All Illustrations Reduced Without Reference to
Relative Size.



A young planting of shrubs, showing Variegated Dogwoods and Cut Leaf Elder in the foreground.
Photograph taken third year after planting. (See page 54.)



Mock Orange—Philadelphus. A specimen in bloom. No idea of the exquisite perfume of this shrub can be conveyed on the printed page. There are also varieties with a scentless flower which is very much larger than the well known Mock Orange. A considerable variety is offered in this class of shrubs. (See page 66.)



Philadelphus or Mock Orange—A specimen grown in tree form, showing its blooming faculty in the nursery. (See page 66)



Prunus Triloba—Flowering Plum. A splendid little ornamental tree for early effect. (See page 67)



Prunus Sinensis—Flowering Almond. Another early spring bloomer. (See page 67)



Hydrangea P. G.—tree form. Young stock blooming in the nursery. (See page 63)



Hardy Pinks—Dianthus. A blooming cluster on the lawn, showing its prolific habit. (See page 21.)



Rosa Rugosa—The Japanese Rose. A splendid variety for northern planting.
(See page 71.) Photograph of railroad station grounds at Lake City.



Buffalo Berry—Shepherdia Argentea. A new hedge shrub. A native of the extreme north, being found well up on the Missouri River in North Dakota. It stands shearing well and is being used considerably as a hedge shrub. As time goes on, it will undoubtedly receive still more attention for this purpose. Its olive colored foliage is unique.



Ptelea Trifoliata—Hop Tree. A rare shrub for the high border and should be used more.
(See page 102)



Foliage and fruit of the *Ptelea Trifoliata*—While not conspicuous, the fruits are a very pleasing addition to the effect. (See page 102)



Spirea Aurea—Golden Leaf Spirea or Nine Bark. Its characteristic feature is its golden foliage shading to green, which gives the effect of sun light upon it even on a cloudy day. Has been considerably used of late for hedge purposes. Makes a fine open hedge where this color of foliage is desired. (See page 73)

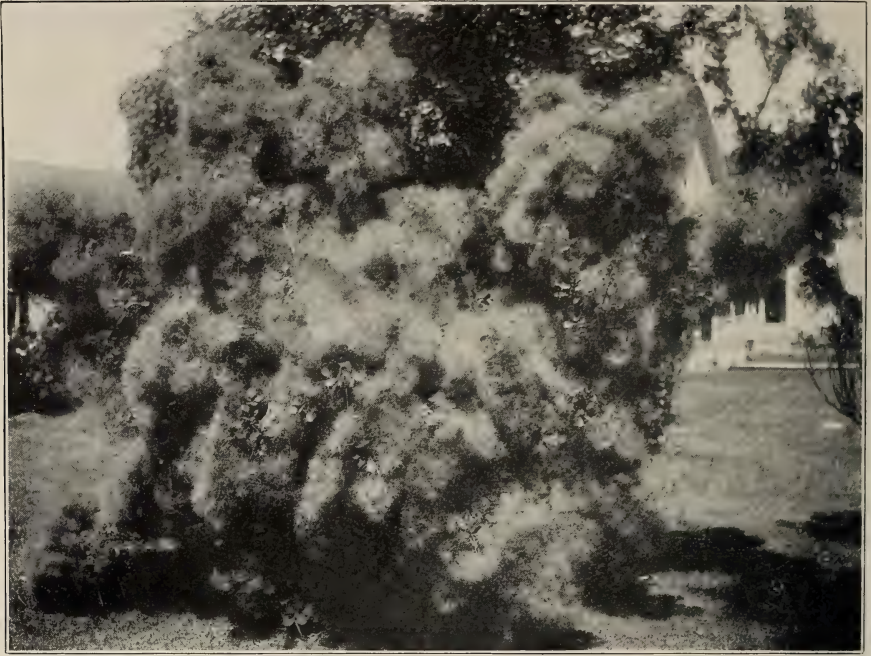


Lilac Le Gaulois. (See page 75)

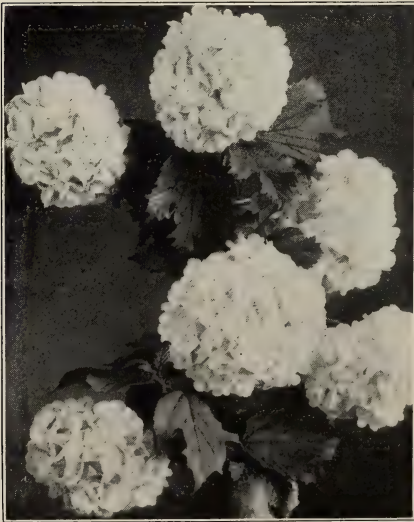


Another specimen of the Purple Fringe or Smoke tree. (See page 69)

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Purple Fringe or Smoke Tree—*Rhus Cotinus*. A well known ornamental shrub of great merit. There is nothing else like it in the line of flowering shrubs. Very desirable in the group or as a specimen. (See page 69)



Snowball—*Viburnum Opulus* var. *Sterilis*.
(See page 77)



Black Haw—*Viburnum Prunifolium*.
(See page 77)

All Illustrations Reduced Without Reference to Relative Size



The Compass Cherry Plum—A cross between the Sand Cherry and the native plum. Is a beautiful specimen when in bloom. As it is a low tree, it lends itself well to ornamental purposes. (See page 67)



Lilac—Villosa. (See page 74)



Lilac—Madam Abel Chatenay. (See page 75)

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Lilac—Siberica. (See page 74)



Lilac—Pres. Grevy. (See page 75)



Driveway thru the heart of the Jewell Nurseries, showing Arbor Vitæ hedge and Cut Leaf Birch on either side.

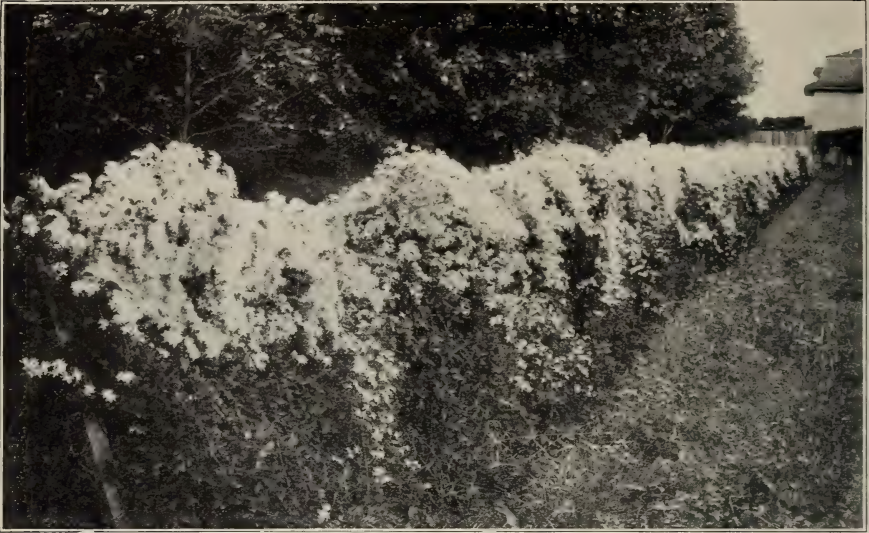


Caragana Arborescens. A Siberian shrub that has found much favor in the Northwest where it is very hardy. It is especially adapted to the purposes of low screens for either ornament or wind protection. It is a good variety for mixed planting in the forestry plot. (See page 57.)



The root box. Our method for packing large sized shade and ornamental trees for freight shipment. A great freight saver.

All Illustrations Reduced Without Reference to Relative Size



Clematis Paniculata—Grown on a fence. This beautiful climber is covered in late summer with masses of beautiful fragrant white flowers. Is desirable for nearly all purposes where a climbing plant is wanted. Here it is grown as a fence covering along the border of a driveway. (See page 81)



Golden Willow as a windbreak tree. Millions of these Willows are being planted for shelter belt purposes in the West. For this purpose it is kept branched clear to the ground. It combines vigor and hardiness with ornamental quality. (See page 106)

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Spirea Van Houttei. One of the most magnificent and popular of the Spireas. In its flowering season, it is a complete mass of white, with here and there a glimpse of its delicate foliage between the wealth of flowers. (See page 73)



Section of hardy shrub department in the Jewell Nurseries. Shows that most of this class of shrubs bloom when very young in the nursery row and are therefore varieties that give prompt results when transplanted. (See page 54)

All Illustrations Reduced Without Reference to Relative size



View in seedling department of the Jewell Nurseries. An idea is here given of the millions of seedling shade trees grown in our nursery for sale in the prairie states where the subject of wind protection is of paramount importance. This shows the little seedlings just coming above ground. They are sold at one, two and three years of age.



Lilac Jean Bart. (See page 75)

All Illustrations Reduced Without Reference to Relative Size



The railroad station at Lake City, showing shrubs and trees fourth year after planting



Japan Tree Lilac—*S. Japonica*. (See page 74)



Lilac— Prof. Sargent. (See page 74)



A lawn group in the Jewell Nurseries, showing use of the Weeping Cut Leaf Birch, Arbor Vitae, White Pine and deciduous shrubs for effect on the lawn.

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Berberis Thunbergi—The gorgeous autumnal coloring is not even suggested in the photograph. A distinct variety. Low growing and compact. (See page 57)



Spirea Sorbifolia—A vigorous shrub that does well in shady places. (See page 73)



Spirea Filipendula—One of the best of the herbaceous Spireas. (See page 48)

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The very old fashioned Snowball is still in great demand and always will be. Its rugged outline, beautiful foliage and the wealth of bloom makes it popular for planting all over the north. Its cousin, the hardy High Bush Cranberry, (*Viburnum Opulus*) is also a shrub that should be more used. (See page 77)



Blossoms of *Clematis Jackmanii*—This and the other hybrids of the *Lanuginosa* types are universally admired for the enormous size of their flowers. There are many shades of coloring offered in this group. (See page 81.)



Northern White Pine—*Pinus Strobus*. Grown in a close clipped hedge. This hedge is about eighteen feet high and about twenty years old. By pruning each year, the hedge is kept even and the lower branches retained. (See page 115)



Russian Olive—*Eleagnus*. A fine ornamental, small tree or large shrub for northern culture. Its olive-like foliage and highly perfumed flowers are unique among cultivated trees. (See page 61)



Railroad station planting, showing the use of Golden Willow, Russian Olive and low growing evergreens suited to small grounds.

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Soft Maple as a wind break. By planting Soft Maple thick and keeping them cut back or "headed in," a thick undergrowth is maintained, and they become a very valuable trees for the timber lot and shelter belt. (See page 91.)



A flowering branch of *Cerasus Serotina*—See photograph of tree on page LI. (See page 94)



European Larch—*Larix decidua*. A unique tree; unsurpassed in grace and beauty. (See page 98)

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Carolina Poplar as a street tree. One of the best quick-growing trees on the market. Even in many of the eastern cities it is being largely planted for street purposes but we recommend its use in connection with other slower growing trees which may fill the place in years to come. (See page 101)



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Hackberry—*Celtis Occidentalis*. Makes a beautiful street tree wherever it is successful. It is considerably like the Elm in its general characteristics but more uniform in its habit of growth. (See page 94)



A good use of hardy shrubs on a driveway, setting them back sufficiently far to give a strip of greensward between them and the road. A border of low growing herbaceous plants also appears at the foot of these but is not conspicuous in the photograph. (See page 54)

The beautiful Weeping Cut Leaf Birch
—Probably the most graceful tree growing
in the north temperate zone. It is univer-
sally planted in America and desirable on
the lawn, in the park and cemetery. (See
page 93.)



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Reference to Relative Size.



A view on a newly planted Minnesota lawn, showing the use of hardy shrubs and herbaceous borders.

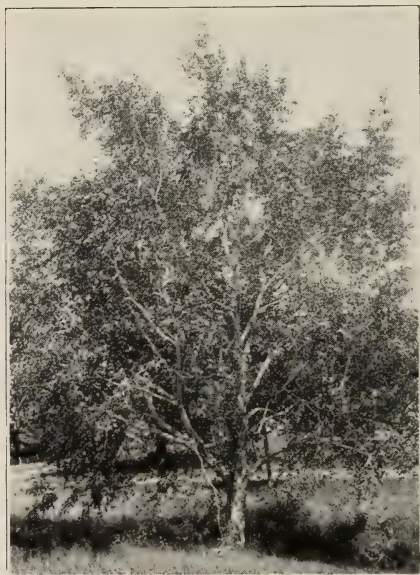


American Ivy—*Ampelopsis Quinquefolia*. As a veranda climber it cannot be surpassed. Its improved form, *Ampelopsis Engelmannii*, has very small leaves and shorter joints and is provided with a great wealth of tendrils. This makes it a good climber for stone walls and brick. This latter form should supercede the Boston Ivy in the extreme north where the latter is not hardy. (Page 79)

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Showing trees in bulk for shipment to the prairie country. This scene on the Jewell Nursery loading platform is a common one in packing time. Thousands of beautiful nursery grown Elm, like those in the photograph, are dug and shipped each year for park and private planting thruout the Northwestern states.



American White Birch—A beautiful ornamental tree. Is not planted as much as it should be but is rapidly making its way to the front and on its own merits. (See page 93.)



Another view on our loading platform. showing a consignment of large shade trees for the Dakotas.

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Street scene in a Minnesota town. Twenty-five years ago there were no trees in this perspective except a few native Oak. In all new towns it is of great importance to maintain uniformity of varieties, and distances in planting as far as possible. Care should be taken to select varieties suited to the particular soil. In this photograph Soft Maple appear on the left side of the street and Elm on the right.



A six foot hedge of American Arbor Vitæ, showing how it collects the drifting snow and keeps it from filling in the roadway. For this purpose it is not necessary to have a high hedge. (See page 116.) (Drive thru center of Jewell Nurseries.)

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Weeping Mt. Ash—One of the few decided droopers that are hardy in the latitude of Minnesota. Combines all the characteristic hardiness of the Mt. Ash with this weeping or pendulous habit, and makes a low, graceful, unique tree for any lawn. (See page 107)



Austrian Pine—A rare and valuable Pine for all locations. (See page 115.)

All Illustrations Reduced Without Reference to Relative Size.



Another view in the Jewell Nursery evergreen department. Here the young Pines and Spruces have attained suitable size for shipment. The root system, by frequent transplanting, has been increased and they are put in fine condition for digging and transportation.



European Mt. Ash—A splendid ornamental tree in the north. Distinguished by its compound foliage and showy clusters of orange berries which load the tree in late summer. (See page 107)



Cerasus Serotina—Native Black Cherry—This is a tree that should be planted more. Its ornamental value is of the first order and its natural hardiness and vigor should place it at the head of the list of northern planters. The above is a large specimen in full flower. A small branch of the bloom is shown on page XLVI which gives an idea of the singular beauty of the tree when in full blossom. (See page 96)



A Siberian crab in blossom is about as beautiful an ornament as any other flowering tree. Their use is recommended everywhere as they are hardy in all parts of the North. (See page 103)



Native Green Ash—*Fraxinus*—as a shade tree. One of the hardiest and most vigorous of our native trees. Desirable in exposed locations. (See page 96)

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Another view in the evergreen department, showing block of *Juniperus Sabina*. We have shipped many carloads of these to New York and other eastern points where they are much used for hedges. (See page 110)



Colorado Blue Spruce—*Picea pungens Glauca*. Perhaps the most beautiful of all evergreens.



Norway Spruce—*Picea Excelsa*.
(See page 114)

All Illustrations Reduced Without Reference to Relative Size



Black Walnut—*Juglans*. The Black Walnut is a very desirable tree for the lawn in many locations. It is absolutely hardy, being a native of the north. (See page 97)



Here the native *Arbor Vitæ* is used as a hedge on either side of the driveway. Desirable in landscape work as it furnishes color during the winter. (See page 116)



In the evergreen department of the Jewell Nurseries, showing the little evergreens in beds under the protection of large Spruce windbreaks. To start evergreens from seed, forest conditions must be simulated. This is why so many people have failures in attempting to plant evergreen seedlings from the woods. (See page 110)



Transplanting the tiny evergreen seedlings the first time. Frequent transplanting is what makes a nursery grown evergreen better than seedlings from the woods. (See page 110)

A young American Linden or Basswood.
(See page 108)



The two photographs on this page show a White Spruce windbreak in winter and in summer. A row of white Pine has been planted on the left side of the road for the purpose of demonstrating the value of these two evergreens as a double row shelter belt. The lower branches of the Spruce are retained by vigorous pruning in the tops. When the plants attain considerable size, the strong leaders which appear at their tops should be severely trimmed. (See page 113)

All Illustrations Reduced Without Reference to Relative Size



A shelter belt of Norway or Russian Poplar. This wonderful tree, with the Golden Willow, is being planted by millions in all the prairie states. For shelter belt purposes, they are generally used together. This Poplar is desirable not only for prairie and timber planting but is also a first class street and ornamental tree. (See page 101.)

Scotch Pines—*Pinus Sylvestris*. A beautiful ornamental tree, either in groups with other evergreens and deciduous trees or as a single specimen. (See page 115.)





Dwarf Mountain Pine. A rugged and beautiful little evergreen shrub desirable on small lawns where pine needles are wanted but not permitting a high tree to be grown. (See page 115.)



European Linden. A most desirable variety for small grounds. Beautiful everywhere. (See page 108.)



A young hedge of Douglas Spruce—*Pseudotsuga*. A vigorous evergreen that should be more planted. It came from western North America where it is one of the tallest and handsomest of the forest trees. (See page 115)



A windbreak or shelter belt of White Spruce. This row of Spruce, now about twenty years old, forms an almost impenetrable shield from the northwest winds. The barn and barnyard, seen in the distance, are thoroly protected, making it possible for stock to be out of doors at all times during the winter. The White Spruce is a splendid evergreen for this purpose. (See page 113)



Golden Nioble Willow—*Salix Vitellina* var. *pendula nova*. A beautiful Weeping Golden Willow introduced from Russia by Prof. N. E. Hansen of South Dakota Experiment Station. (See page 106).



White Spruce—*Picea Alba*.
(See page 113)

All Illustrations Reduced Without Reference to Relative Size

The Golden Willow as a specimen ornamental tree—Here the lower branches have been trimmed up, making it head as seen in the photograph. (See page 106)



Deer Paddock in the Jewell Nursery grounds. These animals are easily domesticated. They make interesting pets for parks and estates where a little space can be devoted to them.

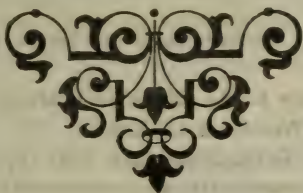


The railroad station at Lake City, showing shrubs and trees fourth year after planting.



The Jewell Nursery Company's Exhibit at the State Fair of 1908, occupying the center of the Horticultural Building. Band stand built of Minnesota fruits.

THE STORY OF
JEWELL QUALITY



THE RESULT OF JEWELL QUALITY

The Story of Jewell Quality

IN ANSWER TO THE QUESTION— DO WE HAVE A NURSERY? READ!

We plant hardy northern seeds to secure hardy northern roots.

We use and grow hardy scions for grafting.

Jewell stock is free from disease.

Our Nurseries are inspected each year by the Minnesota State Entomologist, and continually by our experienced propagators.

We furnish directions for planting and care of stock.

We have expert superintendents for our ten departments of propagation. They are experts.

We are the largest actual growers of nursery stock in the Northwest.

We have 1500 acres, 1000 of which are under cultivation.

Our pay roll last year for work at our grounds alone, amounted to \$96,000 in round numbers.

It will pay you to consult our landscape department.

Our Arboretum covers 30 acres. It shows individual specimens and hedges, so that one may see and choose, according to his taste and need.

Our nursery consists of a variety of soils and elevations. Different plants and species may thus be grown upon soil best suited to their growth.

Our large orchards of 3500 trees in bearing are of our own growing. We shipped 5000 bushels of apples last year.

Our specialties—Everything hardy that is adapted to Northern culture.

We pack under cover of large buildings so that the stock will not dry out.

Our new large packing house 200 by 200 feet, is made of cement blocks—and is fire proof.

We have one large storage cellar, 100 by 200, 18 feet high, also one 60 by 120, 12 feet high. Both are frost proof.

We have a telephone system and operator. Through this system we not only can reach important parts of our grounds, but practically the entire West and North-west.

Our railroad loading platform is 500 feet by 16 feet.

Cars run direct to our packing house, insuring prompt shipments.

It takes 300,000 feet of lumber for packing and several hundred cars for our large shipments of stock each year.

We have large greenhouses for propagation purposes, also supply cut flowers and floral designs at all seasons of the year at reasonable prices.

Forty-five horses and mules are kept in almost constant use.

Our four automobiles insure rapid transit from point to point through our extensive grounds.

We have a complete photographic outfit and own 1400 negatives of different photos of flowers, fruit and scenes from our Nursery.

We have our complete printing department in which we print our catalogs, bulletins and other horticultural literature.

Five hundred and fifty people are employed at the grounds and are on our pay roll at one time during the rush season, with a weekly average during the year of 212 people.

We are the originators of new and valuable fruits, among them the Okabena and Jewell's Winter apples.

We took first prize "Middle West Special" at the National Apple Show held at Spokane—the largest apple show in the world. Twelve states competitors. Twenty-eight exhibitors.



A SAMPLE OF OUR SMALL FRUITS

The Jewell Nursery Co.

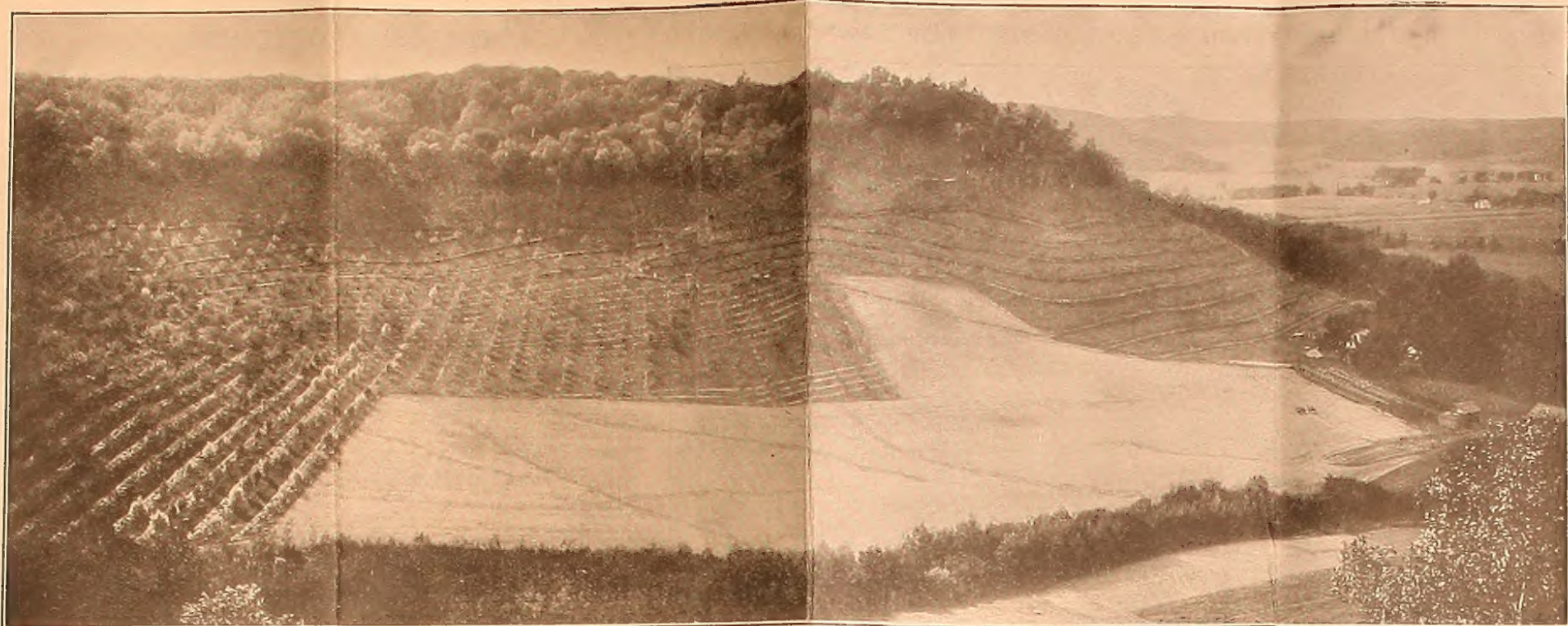
Lake City, Minn.

Established 1868 Incorporated 1884

Largest Nursery in the Northwest

Fifteen Hundred Acres

PRIZE EXHIBITS



The above is a splendid picture of our bluff orchard on which were grown the apples which took first and second prize at the Spokane National Apple Show. This hill side was originally covered with timber. It is very steep and was hardly fit for pasturage. It has now become valuable on account of orchards. Roads have been made around the hillside for convenience in spraying and picking the fruit. At the top of the bluff is a stone quarry, used by the Jewell Company in building their immense cellars and packing houses.

Jewell Nursery Company of Lake City, Minnesota Receives High Awards at National Apple Show

FIRST AND SECOND PRIZES

Jewell Apples Get Awards in Competition with Twelve States in the Middle West.
Twenty-eight Exhibitors Competed for this Prize.

THE JEWELL NURSERY COMPANY of this city sent to the Second National Apple Show at Spokane, Wash., last October, two barrels of apples gathered from their orchard for exhibition purposes, they being entered for premiums. One barrel of Wealthy and one barrel of Northwest Greenings were sent. These apples came in competition with exhibits from twelve states in the middle west. Returns have just been received from the exhibits. The Jewell Nursery Company received one first prize, amounting to \$100, and one second prize, amounting to \$50, and for a third prize a diploma.

This is the first time that The Jewell Nursery Company has ever sent apples as far west as Spokane to compete for prizes. The merit of their goods is well known locally. These apples were grown in an orchard set on a steep hillside located on the north side of a bluff. The land without orchards is not valuable even for pasturage and might sell for \$10 per acre. There is a lot of land of this same character in this section which might profitably be used for the growing of apples. It is the best kind of land that can be secured for this purpose.

People in the extreme Northwest are getting excited over the planting of orchards. There are not trees enough in the country to supply the demand, so profitable has the fruit industry proven. Why shouldn't people in this locality be interested when the land can be purchased for one-fiftieth of what the western land costs, and bring in proportionately fully as great a percentage of profit. People nearby are overlooking great opportunities. The fields look greener far away, but are they? The growing of apples in this section of the country, when properly conducted, can be made exceedingly profitable.—Graphic Sentinel, Lake City, Minnesota.

THE APPLE STATE

Minnesota Wins First Prize in the National Contest at Spokane

Minnesota was awarded first prize at the National Apple Show, at Spokane, Wash., in the Middle West "Special," with a score of 90 points out of a possible 100.

The honor is signal since the state was in competition with Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin.

The exhibit was entered by The Jewell Nursery Company of Lake City, which received the following telegram from the Apple Show officials yesterday:

"Accept our hearty congratulations on winning first prize in Middle West 'Special,' with a score of 90 points out of a possible 100. Premium will be sent to you in a few days."—St. Paul Dispatch, Nov. 29, 1911.

Spokane, Wash., Dec. 5, 1911

The Jewell Nursery Co., Lake City, Minn.

We enclose herewith, check for \$40, covering your premium of first prize in Class 3, Number 2. We are also sending you the prize ribbon as we presume you wish to preserve it.

Please sign and return at once, the receipt for the premium money, as we need it for our files.

You also won a year's subscription to "Better Fruit." and we have advised the publisher to begin mailing the paper to you.

You also won 200 Bolton Orchard Heaters and a Palmer Fruit Bucket which were duly shipped to you December 2nd.

We again congratulate you on your winning these prizes and it is gratifying to know that such good friends of ours should not only win money but added premiums as well.

We followed your instructions and turned over your apples to Mr. F. Morrill, city attorney of this city.

Yours very truly,

National Apple Show,

Ren H. Rice, Secy.

P. S.—There were twenty-eight entries in this class.

Second National Apple Show Spokane, Washington

There were four hundred and sixteen competitors making exhibits in different classes. There were 1,525,831 apples on exhibit. In car load competition, there were thirteen entries, eleven general entries were from foreign countries. The total



This cut represents years of industry, ability, endeavor and success. These are a few of the medals which The Jewell Nursery Company has won in exhibits and fruit displays in which they have taken part. These exhibits have attracted wide attention, because of their excellence and unique design.

number of entries in all classes was 2,322. Taking the average diameter of each apple at 3 inches, and placing them in a straight line, they would extend for a distance of sixty miles. The amount of prizes awarded was \$25,000. The total expenses of the Apple show was \$40,000. The floor space was three and one-half acres. The total receipts not only paid expenses but left a nice surplus for the next National Apple Show.

The Jewell Nursery Company in taking first, second and third prizes, totaling \$150 and three diplomas of merit, thereby brought much credit to the state of Minnesota and to the Company itself. The prizes were awarded for the two best barrels of apples from the Middle West, including all states from Ohio to Montana and Minnesota to Arkansas.

The largest apple in the entire exhibit weighed 41 oz., was 17½ inches in circumference. The variety is known as the Spokane Beauty.

Prizes

The Jewell Nursery Company of Lake City entered two barrels of apples, one the Wealthy and the other the Northwest Greening, for premiums at the National Apple Show at Spokane, Wash., and won the first prize of \$100, a second of \$50 and for a third a diploma. A demonstration that Minnesota can raise just as good apples as any state.—Anoka Union.

“Go For and Get There”

The Jewell Nursery Co., of Lake City, had the courage to send an exhibit of apples to the National Apple Show at Spokane, Wash. When we realize that this is the very center of the apple growing region, it seemed somewhat like carrying “coals to New-castle,” they were awarded a first prize of one hundred dollars on Wealthy apples, a second prize of fifty dollars on a barrel of Greenings and a diploma for special merit. That was a case of “Go For and Get There.”—The Farmer.

Minnesota on Threshold of Commercial Apple Growing

Experts declare conditions favorable for developing industry if more intelligence and labor were devoted to orchards.

It is conceded that the development of apple raising in Minnesota depends upon four things: Soil, climatic conditions, available markets and the man in charge.

It is estimated that 170,000 bar

rels of apples are sold in Minnesota yearly coming from outside the state.—St. Paul Dispatch, Jan. 1912.

Fruit Which Captures First Honors at Spokane Show Raised on Land Thought Worthless

Apples considered by experts the best in a dozen central states, apples that out of one hundred possible points gain from these experts a rating of ninety points, are raised in Minnesota on land which experts declared almost worthless, but which cannot now be bought for one hundred and fifty dollars an acre. Two years ago this same worthless land produced the same species of apples which won first and second prize at Spokane; and there are hundreds of acres of this same kind of land that can be acquired in this state. Apples which bring the first prize to Minnesota again were raised and entered by The Jewell Nursery Co., of Lake City, Minn.—Pioneer Press, Dec. 2, 1911.

Minnesota State Board of Immigration

St. Paul, Minn., Dec. 1, 1911

I am in receipt of your favor of November 29th, concerning telegram announcing your victory at the National Apple Show. Please accept the congratulations of this department.

We are just about to publish a book for distribution at the Minnesota Land Show in December, and if you will send me the original telegram that you received, I will have it photographed and a halftone made to run on one page of our book with an explanatory clause at the bottom of the cut. Yours very truly,

Fred P. Sherman,

Chief Clerk, Minnesota State Board of Immigration.

Spokane, Wash., Dec. 2, 1911

We noticed in the paper a few days ago that you were successful in pulling down a blue ribbon and when the apples arrived yesterday, the enclosed blue ribbon was attached to them. The apples are certainly fine and we have come to the conclusion that the State of Washington is not the only place good apples can be grown. We certainly appreciate the apples.

F. B. Morrill, City Attorney

UNITED STATES POSTOFFICE

St. Paul, Minn., Dec. 1, 1911

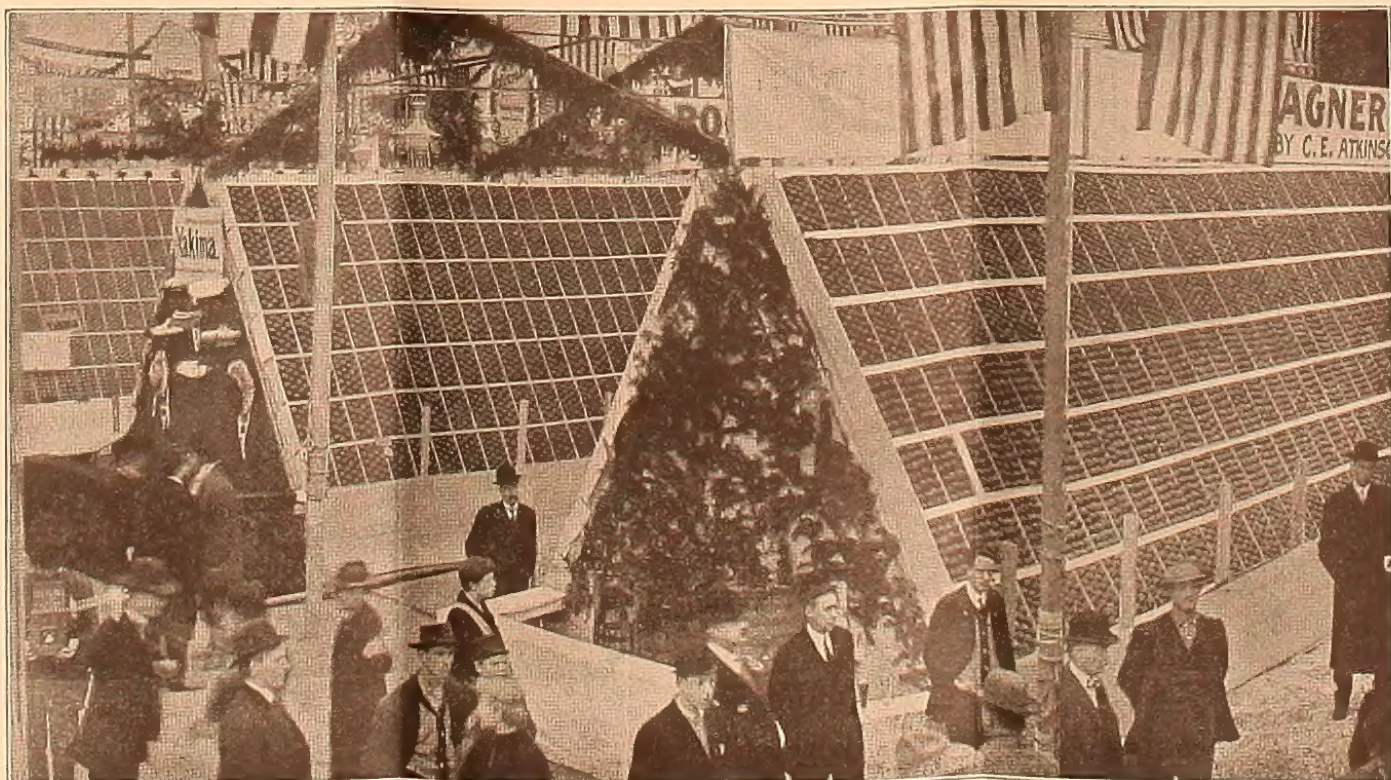
I beg to acknowledge receipt of yours dated Nov. 29th, enclosing copy of telegram which you received from the National Apple Show, Spokane, Wash. This is indeed encouraging for the State of Minnesota, and reflects great credit on The Jewell Nursery Company. It is very gratifying to me that Minnesota made such a creditable showing against the states represented.

E. Yanish, P. M.

Madison Lake, Minn., Dec., 1911.

First of all I want to add my congratulations to the many you have no doubt received, on taking first prize at the Western Apple Show. Your enterprise and progressive liberality deserves the success you have achieved. May your success become a confirmed habit.

J. M. Barclay.



This photograph shows a section of the magnificent fruit exhibit at the Second National Apple Show held at Spokane, November 1909. The finest exhibit in the world.



A well arranged border of hardy shrubbery.



Growing Hydrangeas in the so called "tree-form."